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ORIGINAL ARTICLES.

INTESTINAL ANASTOMOSIS.¹

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ABOUT three years ago a lady came to me from the South with a fecal fistula in the right groin, resulting from the sloughing of five inches of intestine in a strangulated hernia. Three physicians had made intelligent operative efforts to close it, and left her only worse off, as the distal end had slipped back and been lost in the abdomen. The case was a challenge to surgical skill. During several months I made careful and conscientious attempts to cure her. At first, the abdomen was opened to search for the distal end; it could not be found. Therefore, I stitched the proximal end and the ascending colon side by side in the wound, and a few days later opened the colon. A permanent channel was thus established between ileum and colon, when the fistula was capped, and some movements occurred *per anum*. Dupuytren's enterotome was then applied, and the spur cut through for two and a half inches. Still the big fistula leaked most of its contents. Two elaborate plastic operations were then done, using the abdominal skin after the manner of Czymanowski, by which I had closed urethral fistulæ. But these proved futile, and she remained with the usual excoriated abdomen, filthy wound, and marasmus. My colleague, Dr. McBurney, then tried a partial resection of the edges, with inversion and suturing, and from this operation she died.

I have narrated briefly this case to illustrate a considerable class of sufferers whose fecal fistulæ until very recently have baffled the surgeon. Such cases rankle in our memory as marking the limit at which successful work comes to a halt. To-day, thanks to the untiring energy and genius of Dr. Senn, of Milwaukee, such, and many other cases, can be offered the hope of immediate relief by intestinal anastomosis.

The principle of intestinal anastomosis is by no means new. It is on the technique of operative procedure only that its appeal to renewed favor rests. I need not narrate the methods formerly in vogue to restore the intestinal canal. Plastic opera-

tions, resections with circular enterorrhaphy, and lateral apposition with suturing, have had a certain value for many years; the unanswerable objections to them all being a dangerous consumption of time, frequent leakage, and secondary abscesses. With Senn's researches, new life has been infused into this branch of surgery. I will not review his work; it covers the ground of experimental production of intestinal flexion, volvulus, stenosis, invagination, and resection, and in reparative work the study of two methods of restoring the intestinal canal—lateral implantation of a smaller into a larger gut, and lateral apposition of openings into similar portions of bowel. The outcome of it all has been an anastomosis of an interrupted intestinal canal by the safe and speedy method of using decalcified bone plates for approximation. I believe the value of this method will soon be recognized everywhere. His experiments have already been repeated by several and the results uniformly verified.

Those done by Mr. F. B. Jessett and Victor Horsley, and reported six weeks since to the Royal Medical and Chirurgical Society, are noteworthy. Jessett adds his statistics to those of Senn and Curtis, and finds that approximation by the Czerny-Lembert method showed a mortality of about 86½ per cent. against 25 per cent. by the method of lateral implantation, and 7½ per cent. by Senn's bone approximation disks. A method which thus offers an advantage ten times as great as the old one in mortality, and that can be done in one-third or one-quarter of the time, may well inspire enthusiasm.

The application of this principle to man has as yet been limited. Dr. Senn has in six cases applied the plate method in gastro-enterostomy for cancer of the pylorus, with results detailed in four of them in his *Intestinal Surgery*. The two recently done were also successful. Dr. Fenger, of Chicago, and Dr. Hunter, of Minneapolis, have also used them. Successful each in one case. Dr. Ransohoff, of Cincinnati, operated December 31st for gastro-enterostomy by plates in a case of malignant pyloric stenosis with excellent success. An extended search fails to find other recorded cases.

My own experience includes some experiments on dogs, and two successful applications to the human subject. The man whom I first operated on lived three and a half months after I united his ascending and transverse colon by Senn's plates on either side

¹ Read before the Philadelphia County Medical Society, May 8, 1889.

of a malignant stenosis of the hepatic flexure of the colon. His case has been fully reported in the *New York Medical Journal*, March 23d last. The essential points of the case were, progressive obstruction, enormous fecal accumulation, marasmus, and finally collapse—relieved by a colotomy done when he was *in extremis*, and followed six weeks later by colocolostomy with Senn's plates, Nov. 14, 1888. After this he rapidly gained, and in three months was enjoying excellent health. Suddenly there ensued a painless diarrhoea that could not be checked. Rapid emaciation and death followed in twenty days. Autopsy showed that nature had made an artificial opening between the duodenum and transverse colon at the site of malignant stricture. Thus all the small intestine had been excluded, and food passed practically from his stomach directly into his colon undigested; and starvation followed. The specimen obtained shows perfectly the aperture between the portions of colon. It is an oval, the long diameter of which is an inch and a quarter; nearly as long as the incision made three months before. It shows there is little to be feared from the contraction of the opening, and it also shows that an opening very much smaller than the diameter of the bowel is competent to allow one part to empty into another. I would have been very glad to be able to make a larger opening, but this was about the maximum possible by using Senn's plates. The patient had had daily evacuation of the bowels, but it had been half the time through the use of mild cathartics. A larger opening would have obviated the use of these.

The needs of this case, coupled with the fact that I had not been able to get large enough plates to suit the colon, and that the preparation of decalcified bone plates consumed several days and considerable labor, led me to review the ground that had been gone over to get a more available material. I was aware that almost every known soluble substance had been tried, including cartilage, which Jobert and others had used. I devised a ring of rubber, made in segments fastened by catgut which would fall apart after a few days, but abandoned that when I made a stiff one entirely of catgut, which, being wholly digestible, would accomplish what the plates of bone would and then disappear. I made some small sets and tried them on a dog, with the assistance of Dr. Weir and Dr. B. Farquhar Curtis. Beautiful results were obtained in two specimens. When the gut was cut, the ends were invaginated and sutured by continuous Lembert stitch. The two ends being laid side by side, a longitudinal cut was made in each near its end, a ring slipped into the gap in each, and four sutures on the ring stitched through the edge of the gap. The corresponding threads now being tied, pulled

the two rings together, and the edges of the opening were thus sandwiched, as it were, between two rings. Four extra silk stitches were added outside to prevent the lips of the cuts puffing out between the first threads.

The proof of the security of apposition is seen in the dog's recovery. Evacuations were free and regular after the operation, and each of the specimens was taken out with the dog in perfect health nine days after the operation. The union was so perfect that the intestine would have burst elsewhere sooner than have given way at this place. The catgut had entirely gone; a few of the silk threads that held them were yet loosely hanging in the puncture points, ready to come out on slight pulling. The coils of approximated gut, though performing their functions well, showed considerable contortion, and in two later experiments I turned the divided ends to look in opposite directions with better result. These were done on the same dog at the same time, and were made to show a class of physicians the advantage of this method where multiple resections of the gut might be called for, as in gunshot wounds. Four inches of intestine were cut out at each place and the catgut apposition rings applied, the ends being reversed. The result has been perfect. A very large aperture of communication was obtained by the long narrow ring, which so easily slips into the bowel. The twisting of the adherent coils was not nearly so much as in the former case. I am convinced that by the two expedients of using long narrow apposition rings to obtain a large opening, and by placing the intestines as suggested, to obtain continuous peristaltic wave, we obviate a temporary blocking of the operated part which must obtain with the bone plates and small openings, and which leads to much twisting.

In this experiment it took exactly fifteen minutes to resect and complete each apposition. This includes a continuous outside silk suture around the circumference of the ring, which was applied quicker than half the number of interrupted sutures could have been.

An opportunity now came to put in practice the method above described.

In November last a woman of slight build and thirty years old came under my care at St. Luke's Hospital, with a history of uterine disorder for two years, and presenting a small tumor in the right iliac fossa. She had vomited, become anæmic, suffered much local pain, and had developed night-sweats with slight hectic. Pyosalpinx was diagnosed and operation advised. A five-inch median cut was made above the pubes. The diseased mass with omentum and coils of small intestine intimately adherent, was found to be a suppurating ovary as large as a goose-egg. Some intestines were stripped off, others seemed too firm. One of my assistants, a

distinguished disciple of Mr. Tait, being asked to examine to see whether the tumor could be removed, or whether it had best be scraped out and drained, succeeded, while examining, in digging the ovary from its bed, after the manner of Tait, who says no tumor of this character need ever be left, no matter how firmly adherent. I was surprised and delighted to be shown that this mass could be thus removed by the fingers. Notwithstanding that the suppuration had been disseminated in the wound, it was readily douched away by copious hot water effusions; but great chagrin followed the immediate discovery that a circle more than an inch in diameter had been torn from the side of an adherent loop of intestine and was on the tumor. Feces appeared at once in the deep cul-de-sac of the pelvis. I promptly found and sutured the damaged bowel, irrigated and applied a tamponade of iodoform gauze lightly, and closed the wound except for drainage. Two days later feces welled up in the wound, and a horrible, and, I feared, a hopeless fecal fistula was thenceforth established.

During the following six months the patient passed through not only the suffering incident to her fecal fistula, but also a severe attack of scarlet fever with acute desquamative nephritis. And when I returned to hospital duty I found her emaciated and weighing less than seventy pounds. Her abdominal wound healed, except over the pubis, where a long funnel-shaped wound, lined by poor granulations, gave vent to her entire fecal discharge, which came from the depths of the pelvis. The skin about it was sadly excoriated, and too tender to allow adhesive straps to retain dressings. She was of a cheerful disposition, and hopefully looked to me to relieve her, even at the risk of life, which had become a burden. With the picture in my mind of the intestines matted together, and in the midst of all a portion whose lumen was destroyed, from which feces poured, in the site of the ovarian abscess, I looked upon the case with grave doubt of cure. The more so, because she had been subject to a hectic, with daily exacerbation of temperature to 102° and 103° up to the day of operation. My experiments with intestinal anastomosis, however, gave hope, and on March 22d—six weeks ago—I operated. Ether anæsthesia was used, notwithstanding she had five per cent. of albumin in her urine.

I dissected out the cicatrix around the funnel-shaped fistula, and opened the laparotomy wound upward. The intestines in the entire lower abdomen were matted firmly together, and uniformly studded with miliary tubercles. The pathologist's report confirms this, and I presume the original ovarian mass was a tubercular ovary, though I regret to say it was mislaid at the operation. With great care the intestine leading to the fistula was dissected out on either side of it for four inches, and cut squarely across. The ends were then turned in for half an inch and closed by a single row of continuous Lembert sutures of fine black silk. It was impossible here to turn the ends in opposite directions, and they were laid side by side, split open longitudinally for an inch and three-quarters, nearly to

the end, and united with catgut apposition rings, with a half-dozen reinforcing silk stitches outside. The entire wound was douched liberally with hot water, and a portion of the deeply adherent gut between the cut ends was further dissected away. The wound was closed, except for a light tamponade of gauze at the site of the fistula.

The patient rallied nicely, had no pain whatever afterward, and no feces came into the wound. She had a little vomiting the next day, but retained koumys and champagne, an ounce every two hours, in drachm doses. At the end of the fourth day, her temperature having risen to 102° , I gave liq. magnes. citrat. $\mathfrak{z}\text{iv}$, and repeated. Three natural and painless movements passed by the rectum for the first time in six months, and her temperature fell to 100° . Daily movements took place from that time on, at first assisted by four ounces of magnesia every third day. The wound granulated nicely, and no feces have ever appeared there. The patient walked about after the fourth week, and is restored in appetite and health. She now gains three pounds weekly, is free from pain, and is making a happy convalescence. Her evacuations are normal and regular, well formed, and occur without the use of medicine.

Thus is completed a proof of the efficacy of a new method, treating a malady which I know of no other method as competent to cope with. I can hardly conceive of a fecal fistula in any part of the bowel (except, perhaps, low in the rectum) that may not be safely cured by this method, provided the distal portion is not blocked by disease. In cases of gangrenous hernia, bullet or other wounds requiring exsection of a portion of the bowel, it may be applied at once, or after an artificial anus is established and the patient is convalescing. No surgeon or physician need hesitate to make a fistula to relieve obstruction, or in other suitable cases where the equipment to complete the immediate anastomosis is not at hand, or where the patient's condition will not endure much interference, as in the first case narrated.

Two weeks ago my friend, Dr. Charles McBurney, applied a set of my catgut rings to a case of gastroenterostomy, and writes as follows:

"The case was one of cancer of the pylorus which caused total obstruction. The patient would not consent to an operation until he was nearly moribund. The anastomosis was made between the highest part of the jejunum and the anterior of the stomach, near the greater curvature, and about three inches from the pylorus.

"The operation was perfectly easy and rapid, and the rings acted perfectly. The whole operation took forty-five minutes, much time being lost on account of imperfect washing of the stomach beforehand. I think it could easily be done inside of thirty minutes.

"Death occurred from inanition about twelve hours later. On careful post-mortem test, the stomach being filled with colored fluid and held up, absolutely no leakage at the site of operation occurred."

To make the rings most efficiently the following steps must be observed: A moderately heavy catgut

is chosen; taken from alcohol or juniper oil, it is wound loosely on a test-tube and soaked in hot water. It soon kinks up, and, were it not on a tube, could hardly be unravelled. After a while it is straightened out, allowed to untwist, wound again loosely, and soaked in hot water once more, until it ceases to twist. It is then ready to make up into rings, which will lie perfectly flat. Eight or ten turns over two pins stuck in a cork two inches apart, will make a bundle somewhat smaller than a lead pencil. These may be tied at four places with fine silk, to secure the strands parallel while being wound round like a cable, with a continuous piece of the same catgut. The end of the piece is secured by threading it into a Hagedorn needle, and transfixing the whole bundle obliquely with it at the place of finishing. Thus there are no knots, and it is difficult to find the point of beginning.

The ring is now a long oval with an inside diameter of two inches, and in thickness smaller than a pencil. Six strong but small braided silk threads are now fixed to each ring, equidistant, on the face looking toward the other ring which is to be laid against it. No knots are used. A needle pierces the ring between the strands, carrying the thread, which is drawn through all but eight inches, and wound once and a half round, sinking between the encircling catgut, piercing the ring again, and cut off. The rings, which have now been water-soaked, are ready for use if needed for emergency; but, if possible, they should be kept awhile in alcohol, under pressure between two glass slides, the threads being curled up within the oval, and the sides being pressed together after the glasses are tightly tied together. The ring thus becomes a long oval with parallel sides, and soon becomes harder and flattened on its faces. Moreover, it shrinks a trifle in alcohol, to swell again in the intestine and give additional security.

In using the rings, I find it saves time to have each thread have its own needle. The intestine is pierced from within outward less than a quarter of an inch from its cut edge. The ring should be laid on a damp folded towel with threads in order and needles stuck in the towel, which is held by the assistant close to the bowel, while the operator quickly pulls the threads through and passes the ring into the interior of the bowel. When the threads are tied and cut off, the apposition is perfect, but by a quickly made running suture outside all, a half inch of peritoneal surface is at once secured beyond the possibility of leakage. More than this is superfluous, for the edges held between the rings act as valves.

In invaginating the end of the cut intestine after exsection, one will delay a long while if he tries to turn in first one and then the other edge, and will also find the mesentery try to turn in after it on the

attached side. My rule is to trim back the mesentery at least a half inch from the end. Then seizing both lips with toothed forceps, plunge them directly into the lumen. The entire edge usually follows, and one holds them by the left index finger and thumb while a quick running overhand suture of the slit thus formed is made.

REPORT ON THE TREATMENT OF FOURTEEN CASES OF DISEASE OF THE SPINAL CORD, BY THE METHOD OF SUSPENSION.¹

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ALTHOUGH the treatment of locomotor ataxia by suspension was introduced in 1883, by Motchoukowsky, of Odessa, in Russia, the method received no extended trial in that country, and failed to attract notice elsewhere until the attention of Prof. Charcot was directed to it last autumn. Since the date² of the publication of the latter's first lecture on the subject, the method has received such publicity through the journals that a description of it here is unnecessary.³

In cord affections occurring secondarily to disease of the vertebræ this method was advocated, and practised with good results, so long ago as 1826 by Prof. J. K. Mitchell, of the Jefferson Medical College, and has been employed for a number of years by Dr. S. Weir Mitchell⁴ in the same class of cases. The latter, indeed, about the time of Motchoukowsky's discovery, was induced to attempt suspension in two cases of spastic paraplegia in which no spinal caries existed; the excellent results obtained from it in pressure paralysis having led him to believe that stretching the cord, and thus altering its vascular conditions, even when signs of meningeal inflammation were absent, would helpfully affect both cord and membranes. Unfortunately, in these cases, no benefit followed; had it been otherwise, suspension would, no doubt, long since have been generally recognized as a useful adjunct to our scanty therapy in chronic degenerations of the spinal cord.

Closely following the introduction of the method into France it has been used in many forms of dis-

¹ Read before the College of Physicians of Philadelphia, May 1, 1889.

² Progrès Médical, Jan. 19, 1889.

³ For details, vide Progrès Médical, Jan. 19 and Feb. 23, 1889; Rev. Gén. de Clinique, Feb. 14, 1889; and The Treatment of Locomotor Ataxia by Suspension; translated from the French of Prof. Charcot, and edited by H. de Watteville, M.D. D. Stott, London.

⁴ Vide Treatment of Pott's Paralysis by Suspension, etc., by S. Weir Mitchell, M.D. American Journal of the Medical Sciences, May, 1889.

ease of the cord, in various forms of chronic degeneration of the nervous system, and in functional nervous trouble, such as neurasthenia; but, thus far, no report has appeared of a sufficiently extended trial in these to justify positive conclusions as to its utility. I have not, as yet, suspended more than a few times, at very irregular intervals, cases other than those of cord disease. Efforts are now being made to induce a considerable number of chronic nervous cases, which have been intermittently under observation in the out-patient medical department of the Jefferson Hospital for some time, and which, seemingly, are such as might receive benefit from this treatment, to submit to its trial. Later, a report will be made on suspension in these. The fourteen upon which this paper is based comprise eight tabetics, three cases of spastic paralysis, two of ataxic paraplegia, and one of myelitis. The following are brief histories of these:

CASE I. *Locomotor ataxia; second stage.*—Clement N., aged thirty-eight years; waiter. First seen January 23, 1889. He then had had severe lightning pains for a year or more. There had been present from about the same time incoördination of movement, especially in the dark. This was increasing. There was heightened sexual desire, with nocturnal losses, constipation, and vesical incontinence. Swaying was so decided, with feet together and eyes closed, that he would fall if unsupported. He had lost twenty pounds in weight in eight months. The upper extremities were not involved. There were no eye symptoms. There were plantar anæsthesia, with delay in transmission of an impression, perverted temperature sense, and absent knee-jerk. Had syphilis in 1879.

He was placed on mercuric iodide until treatment by suspension was begun, on February 18th. The only change in his condition then was slight diminution in the severity of the pains. He has been suspended, in all, thirty-six times, usually four times a week, Monday, Wednesday, Thursday, and Saturday being the days chosen. The duration of the first suspension was one minute, the second one and a half minutes, the third two and a half minutes, the fourth three minutes; all the subsequent suspensions were from four to five minutes, usually the latter. He was swung entirely from the ground in all the suspensions. The first three suspensions were by the head alone, but so much spinal pain was felt during them that, thereafter, shoulder-straps were also used, he being directed to raise and lower the arms slowly three to four times in a minute. At the fifth suspension marked improvement was apparent; his gait was decidedly better; static ataxia had lessened materially, the lightning pains had decreased in severity and frequency, and plantar anæsthesia had diminished.

During the second week of treatment the pains entirely disappeared, and have not returned. Since then improvement has been gradual, though continuous, to the present. The increased sexual desire, constipation, and vesical incontinence have disap-

peared. He is now able to walk with eyes closed; static ataxia is slight; subjective sensation in the plantar surfaces is good, and the two points of the æsthesiometer are now felt at the normal distance; temperature sense is normal; the knee-jerk has not returned.

CASE II. *Locomotor ataxia; second stage.*—William E. T., aged forty-six; clerk. Had been under observation but a short time when suspension was begun. The following is an abstract of the symptoms noted the day of the first suspension: He had *petit mal* for one and a half years preceding the onset of tabetic symptoms three years ago. There then appeared lightning pains, which continued intermittently until suspension was begun. Before the first suspension they were very severe, and were aggravated in damp weather. Sexual desire was at first increased and then lost. There were constipation, alternating with fecal incontinence, and loss of vesical control. The gait is ataxic; there is staggering in the dark and in turning. Swaying is decided with feet together and eyes closed. The upper extremities are unaffected. There is decided tactile anæsthesia of the lower limbs. Temperature sense is perverted. Tactile and temperature sense are decidedly delayed. Knee-jerk is absent. There are no eye symptoms. He is melancholic; attributes his disease to mental worry. No specific history.

He was first suspended February 15th, and subsequently three to four times weekly to the present; but occasionally there was an interval of several days between. The first four suspensions were entirely by the head; in the later ones shoulder-straps were used, the arms being raised and lowered as in the other cases. First suspension occupied three-quarters of a minute; the second two minutes; the third and fourth two and a half minutes, and all the subsequent ones two to five minutes, the average being three minutes. He was rarely suspended five minutes, because of severe pain always appearing in the cervical and dorsal region when the treatment was prolonged. He thinks the improvement better when the time of suspension is shorter. After the fourth suspension there was improvement in the gait, and decided diminution in the severity of the lightning pains, though the weather was bad for some time. After the seventeenth suspension, vesical and fecal incontinence entirely ceased, and has not returned. The improvement in his gait had then begun to be remarked upon by all his acquaintances.

He has now been suspended thirty-two times. There has been no change in his condition since the twenty-fifth suspension. It was then noted that his walk and station were far less ataxic than at first. There is a most decided improvement in his mental condition; cheerfulness has replaced despondence; he has gained strength; appetite and sleep are better than at first. The lightning pains no longer occur; rheumatoid pains are occasionally felt prior to a storm, but are of no severity. Sexual desire and capacity have not returned. Knee-jerk remains absent. There is less tactile anæsthesia in the lower limbs; sensation, however, is still delayed. He can distinguish heat and cold, but there is delay in transmission as before.

CASE III. *Locomotor ataxia; second stage.*—John Van S., aged fifty-three. Has been under observation for ten years. Knee-jerk has not been present during that time. Gait has been ataxic for twenty years; anæsthesia and lancinating pains have been present for the same period. There was loss of sexual power and desire, which returned somewhat for a time, with, also, some amelioration in the other symptoms, under the salts of silver and potassium iodide; but, prior to the first suspension, locomotion without two canes had been impossible for seven years. The gait was typically ataxic, and there was retroflexion of the knee-joints. Lightning pains were severe and constant. Tactile sense was diminished; temperature sense was normal. There was concentric limitation of the visual field with a normal fundus.

The first suspension (one-half minute) was on February 20th; the second (two minutes) on February 25th; the third (two minutes) on the 27th. Since then he has been suspended from three to four times weekly, receiving in all thirty suspensions, which, after the fourth, were of five minutes' duration. No pains occurred during them. The method was the same as in the preceding cases. The lancinating pains disappeared the day following the third suspension, and have not returned. On the day of the fourth suspension (twelfth of treatment) he appeared at the hospital without a cane, coming a distance of several miles, and walking a fair part of the way; the first time he had done without support in locomotion in seven years. Subjective sensation in the plantar surfaces was also better, and he expressed himself as feeling "like an old buck." This improvement in gait has been continuous to the present, and is remarked in wonder by his family and neighbors. Sexual power and tactile sense have improved. The knee-jerk has not returned.

CASE IV.¹ *Locomotor ataxia; second stage.*—George L., aged sixty-three years; schoolmaster. Seven years ago lightning pains, anæsthesia of the lower limbs, and an ataxic gait appeared, with loss of sexual desire. An examination immediately before suspension was begun showed markedly ataxic walk and station; absent knee-jerk; decided tactile anæsthesia in the extremities; Argyll-Robertson pupil. There were girdle and shooting pains. No specific history. He was at first suspended every day for three weeks; and subsequently on alternate days. The average length of each suspension was two and three-quarters minutes. There has been a very distinct improvement in gait, and incoördination is slight compared with what it was. The girdle sensation has disappeared, and the lancinating pains, though not entirely gone, have much ameliorated. The knee-jerk has not returned, and the reflex immobility of the pupils and loss of sexual desire continue. The mental condition has improved.

CASE V. *Locomotor ataxia; first stage.*—James L. E., aged forty; brakeman. For several years he has had characteristic lightning pains, and recently has noticed uncertainty of walk in the dark. With

closed eyes there is bad station. The gait is not ataxic. The knee-jerk is absent; no reinforcement. There is Argyll-Robertson pupil. He has been suspended four times. After the second suspension there was a decided lessening in the severity of the pains. This case came to the hospital from a distance, unprepared to remain longer than a week. A report on his condition will be made at another time, after further suspensions.

CASE VI. *Locomotor ataxia; second stage.*—Mrs. M. C., aged forty-eight; general housework. Since September, 1883, she has had paralysis of the left third nerve, causing mydriasis, external strabismus, and almost complete ptosis. In 1887, locomotion became difficult, at first only in the dark, but soon in the light. She has had lightning pains for over a year, and rheumatoid pains occur in the joints, worse in damp weather. There is a constant sensation of burning and weight in the dorso-lumbar region, and the spinous processes of the vertebræ in this situation are decidedly tender on firm pressure. There are: staggering gait; inability to stand with feet together and eyes open; absent knee-jerk; pronounced tactile anæsthesia in the lower limbs, and especially in the plantar surfaces; normal temperature sense. An examination of the eye showed hypermetropia; a normal fundus; total paralysis of the left third nerve; pupils irregular in outline, responding sluggishly to light, and immobile to accommodation. The above points were noted when she first came under observation, two months before beginning suspension, and again immediately before. She had received no benefit from medical treatment.

The first suspension was on February 15th, and the last on March 30th, she receiving it in all twenty-one times, usually four times a week. The first two suspensions occupied three-quarters of a minute; the third, one minute; the subsequent ones from two to five minutes, usually the latter. The method was similar to that pursued in Case I., and the intervals were the same. The first three suspensions were accompanied and succeeded by an increase in the sensations of burning and weight in the dorso-lumbar region; this, later, disappeared, but returned occasionally while suspension was continued. The tenderness over the spinous processes, however, entirely disappeared. The shooting pains were decidedly ameliorated, and station improved after the sixth suspension. The ptosis was noted to be much less at the date of the twelfth suspension. Other than these there were no changes. Loss of knee-jerk, tactile sensation, and sexual desire persisted. After a six weeks' trial she ceased to return for suspension.

CASE VII. *Locomotor ataxia; second stage.*—Mrs. R. C., aged forty-nine; housewife. The following points were noted shortly prior to beginning suspension. Has had characteristic lightning-like pains for fifteen years, and for the past six years an ataxic gait; sensations of numbness from the waist downward; a girdle pain, and absent sexual desire. There were present very bad station; absent knee-jerk; decided tactile anæsthesia in the lower extremities, but normal temperature sense. There were Argyll-Robertson pupil and beginning atrophy

¹ Patient of Dr. E. P. Hershey's.

of the left optic nerve. Because of being light in weight, she was suspended by the head alone.

The duration of each suspension varied between three-quarters of a minute to four minutes. She was suspended in all ten times. At the visit for the fifth suspension it was noted that her gait and station had decidedly improved; she felt stronger physically, was in better spirits, and had little or no pain. After the sixth suspension the ataxia had lessened so considerably that she presented herself for the seventh suspension (the thirteenth day) walking entirely without support—for the first time in several years. The improvement in gait and station and the lessening in the pains were maintained; but at the date of the ninth suspension there was no return of knee-jerk, and tactile and sexual anæsthesia remained. The eye symptoms were unchanged. She complained of having trouble at home, and of being much overworked, and did not return for treatment after the tenth suspension—why, I am unaware, as she stated at the last visit that she was much gratified with the improvement.

CASE VIII. *Locomotor ataxia; second stage.*—Mrs. K. M., aged forty-five years; housework. The following symptoms were noted just prior to beginning suspension. Has had generalized neuralgiform pains for twelve years, with occasional lightning-like pains down the thighs. Has been somewhat ataxic for a number of years. There are decided static ataxia, absent knee-jerk, paræsthesiæ in the lower limbs, diminished and delayed tactile and temperature sense in the plantar surfaces, absent sexual desire, Argyll-Robertson pupil. She was suspended in all eight times, and then was forced to discontinue her visits because of contracting a severe cold. At the time of the last suspension the only improvement noticeable was in the ataxia. The walk was normal and there was far better station.

CASE IX. *Primary spastic paraplegia.*—Henry S. A., aged thirty-seven years; cake-baker. Eleven years ago there gradually appeared weakness in the lower limbs, with rigidity and tremors. For several years has been totally unable to walk without crutches. Immediately prior to beginning suspension it was noted that he could not walk more than a few steps with them. The gait was typically spastic and the limbs shook as he progressed from the clonus produced as the ball of each foot rested alternately on the floor. The lower limbs were rigid; the knee-jerk was much heightened, ankle clonus was very decided, and there was a general increase in the tendon and periosteal reactions. Sensation was normal; coördination, also, as far as it could be tested. There had been obstinate constipation for years, and, occasionally, rheumatoid arthritic pains.¹ No specific history.

Suspension was begun on February 25th and continued four times weekly until March 25th, when he returned to his home in Camden. Though com-

pelled to depart, he was so unwilling to abandon a treatment which seemed to be productive of so much good that he purchased an apparatus and has suspended himself daily from March 26th.¹ Allowing for psychical effect—for he has become a decided enthusiast on the method—the improvement in his condition has been marked. The day following the second suspension he stated the limbs felt less stiff, their movements were freer and more under control, and that locomotion with the aid of crutches was less difficult; this at the time of the fourth suspension, was apparent to myself and others who then saw him. There were less spasm and rigidity and the gait had improved. Coldness of the feet had been constantly present before suspension was begun, but disappeared after the first hanging, and has not returned. He recently wrote to me, in reply to an inquiry as to his condition, that he had discarded his crutches and now goes about the house readily enough with the aid of two canes; that he stands without fear of falling, and that there is freer movement in the feet and less tremor and spasm in the limbs than there has been for ten years.

CASE X. *Primary spastic paraplegia.*—Geo. F., aged thirty-eight years; shop-keeper. Five years ago the lower limbs became gradually weak, easily fatigued, and were the seat of stiffness and occasional spasm. A typical spastic condition is present. The walk is spasmodic, the knee-jerk much exaggerated, and there is a decided ankle clonus. There are no disturbances of sensation or coördination. The pupils are normal. There is beginning atrophy of the right optic nerve. He had syphilis seventeen years ago. He has been suspended thirty-four times; method, duration, and intervals, the same as in Case I. There has been no decided improvement in his condition. After the seventh suspension he stated he had begun to feel in higher spirits and ate and slept better. He thought the limbs were not so weak and rigid as formerly. I, however, noticed no difference then, but, on examining him the day of the tenth suspension, there seemed less spasticity and his walk had improved, but the tendon reflexes continued exaggerated as before. Since then the improvement in gait has not been marked. There is now, however, much less fatigue felt in the legs than formerly and less tendency to spasm. The knee-jerk continues heightened, but the foot clonus is less easily elicited and is feebler.

CASE XI. *Primary spastic paraplegia.*—Samuel G., aged fifty-three years. A year ago there gradually developed weakness and heaviness in the legs and a tendency to jerking of the muscles. Several attacks of colic preceded the appearance of these symptoms. There is weakness in the legs on slight exertion and the gait is slightly spastic; the knee-jerk is increased and a clonus can be produced in the left ankle. Tactile sensation and coördination are unimpaired. There are no electrical changes and no specific history. There is atrophy of the left optic nerve. He was suspended thirty-four times; the method, duration, intervals, etc., were the same as in Case I. There has been no improvement in his condition, save that he has lost a feeling

¹ It is interesting to note that, when he first presented himself for treatment, one and a half years ago, and was under observation one week in the wards, his occupation and the eliciting of the last mentioned symptoms, caused me to suspect lead poisoning. His urine was then examined by Prof. Leffmann, who reported that it contained considerable lead.

¹ He has now had forty-five suspensions.

of nervousness and dread that was very prominent before suspension was begun. This disappeared in the second week.

CASE XII. Combined lateral and posterior sclerosis.—Henry S., aged forty years; shuttlemaker. He visited the clinic once, five years ago, in search of a diagnosis. The following points, with others, in his history, were then noticed: Staggering gait; left knee-jerk much increased; incoördination; cannot walk or stand without assistance; impaired grasp, both hands; shooting pains in the extremities; pruritus; constipation; incontinence of urine; normal tactile sense; double optic neuritis; loss of color sense; peripheral vision better than central; no specific history. He was recently invited to present himself for suspension. Additional points noted at the date of the first suspension are, that the first symptoms appeared ten years ago, and were those of combined lateral and posterior sclerosis. There is now present a spastic gait; inability to walk or stand unsupported; rigid limbs; much exaggerated knee-jerk; very decided ankle clonus; pronounced incoördination in both upper and lower extremities; normal tactile and temperature sense; unimpaired sexual power; chest pains; constipation; no bladder difficulty; advanced double optic atrophy and limitation of the visual field; pupils normal in size, and immobile. He received nine suspensions. At the time of the third suspension he felt decidedly stronger and better; limbs were more supple; had walked more in the two preceding days than for three or four years. The fourth and fifth suspensions caused severe pain in the back and limbs, and slight faintness. After the ninth suspension he abandoned the treatment, believing that the distance he was compelled to travel to be suspended overcame any benefit he received.

CASE XIII. Combined lateral and posterior sclerosis.—John S., aged thirty-one years; miner. Has had lightning-like pains in the extremities, more or less constantly, for three and a half years, and dull aching in the lumbar and sacral region. Motor weakness and incoördination in the legs, with stiffness and tremors, appeared shortly after the onset of the pains, and are increasing. He is unable to walk with closed eyes. The gait is slightly spastic. The leg muscles have dwindled. There is slight plantar anæsthesia and delay in the transmission of a tactile impression. The knee-jerk is very active; ankle clonus is pronounced. The arms are normal. There is no bladder or rectal trouble. Sexual power impaired. No specific history. He believes the disease was induced by constant exposure to wet cold. He was suspended six times, and then returned home. Subsequently, without my knowledge, he used suspension on alternate days for six weeks, and he now writes that he has but slight pains and that locomotion is "almost as good as ever."

CASE XIV. Subacute dorso-lumbar meningo-myelitis.—John B., aged twenty-nine; miner. In March, 1888, five weeks after a fall upon the buttocks, in which he felt himself much shaken, there appeared difficulty in locomotion; lancinating pains in the course of the ilio-hypogastric and ilio-inguinal nerves, and in the thighs, which continued con-

stantly for several months. The pains were of great severity, and necessitated the frequent hypodermatic use of morphine for their relief. In August, the loss of power became absolute; he was then unable to walk, even with crutches. I saw him first on February 28, 1889, when he was brought to the hospital for treatment. There was then total paraplegia. He could not maintain the erect posture, though held by two men. The legs and thighs were somewhat wasted; a spastic condition was developing, and reaction of degeneration had appeared in the anterior thigh muscles. The spinous processes of the first and second lumbar vertebrae were decidedly tender on pressure, and the vertebral points below this were slightly so. There was marked diminution in tactile perception in the lower limbs; the two points of the æsthesiometer being felt as one at their greatest separation. Heat and cold applied to the plantar surfaces seemed equally hot, and the touch of a feather produced a burning sensation. A very faint plantar reflex was present, but no gluteal or cremasteric. Knee-jerk was just perceptible on the right; a trifle better on the left, but much enfeebled. A hot sponge drawn down the spine showed a hyperæsthetic zone in the lower dorsal region.

Suspension was begun on February 28th. The neck and shoulder straps were used. He was always drawn entirely from the floor, and the arms were raised and lowered at intervals, as in the other cases. The first suspension occupied one minute; the second three minutes; the fourth four and a half minutes; all the subsequent ones five minutes. He has now received thirty-one suspensions, and the improvement in the paraplegia has been remarkable. After the second suspension he was able to stand with crutches, and, at the time of the fourth, he got about the wards with their help, and, since April 1st (eighteen suspensions), he has been able to walk a short distance with the aid of one cane. The rigid condition of the limbs has lessened, and their nutrition is better. The tenderness over the lumbar vertebrae had entirely disappeared by the latter part of March. Pains occasionally appear in the interval of the suspensions in the course of the ilio-inguinal and ilio-hypogastric nerves, but are always dispersed by a suspension. The knee-jerks are somewhat more active than normal. The plantar reflex has improved; the gluteal and cremasteric remain absent. Anæsthesia in the plantar surfaces has lessened very materially.

The total number of suspensions made in these cases is upwards of 352. An extended analysis of the results obtained is unnecessary. It may be seen by a glance at the histories that, in the tabetics, the symptoms which were first and most strikingly relieved were the ataxia and the lancinating pains; improvement in these occurred in all,¹ and after a very few suspensions; and that, if any relation existed between the early appearance and extent of

¹ No pains were present in Case VIII. while under treatment by suspension.

the improvement and the duration of the disease, it is a direct one; the more chronic cases being those most promptly and decidedly benefited. The improvement in these two symptoms, the most prominent and distressing of the disease, in at least two of the cases (III. and VII.) was so prompt and decided that it may well be considered truly remarkable.

Bladder and rectal difficulty, present in two of the tabetics, and increased sexual desire present in one, have disappeared. Diminution in, or loss of, sexual desire, present in five, has improved in but one. Tactile anaesthesia has much improved in three and slightly in one; not at all in four. A somewhat melancholic condition, present in five of the tabetics, disappeared after a few suspensions. This was not due directly to the suspensions, but was rather secondary to the lessening of the pains and ataxia. In none of the eight has the knee-jerk returned, even with reinforcement.

In the three spastic cases, diminution in the paralysis, rigidity, and spasm has been striking in one and slight in another; in the third, no change has occurred in these symptoms.

In one of the ataxic paraplegic cases ataxia and paralysis seemed to be lessened after the second suspension. Unfortunately, this improvement was not maintained, possibly because suspension was not persevered in. The other case writes me that there has been marked improvement in gait and pains.

In the case of myelitis, the improvement in the paraplegia and in the general condition has been decided.

Eye symptoms, where present in the fourteen, have undergone no change.

As these cases are few in number, and have been under treatment by suspension but a comparatively short time, no very definite deductions can yet be drawn as to the exact value of this method in the treatment of degenerative and inflammatory diseases of the cord. It may, however, be safely asserted, from the favorable results obtained in nearly all of the tabetic cases, that suspension is of great service in locomotor ataxia, but, whether palliative merely or actually curative, the time has not arrived for definite reply. It is certainly of use in lateral sclerosis; and, in myelitis, the decided improvement produced in one case, in which absolute paraplegia had existed for over six months, commends its trial in others. That suspension will, even though aided by wisely directed medical and hygienic means, effect a cure in degenerative disease of the cord is, I think, doubtful; but, as an adjunct to other modes of treatment, its utility is beyond question.

The recent plausible explanation as to the action of suspension in tabes, offered by Althaus,¹ indi-

cates that permanent benefit may result from this method, provided that the further progress of the disease can be arrested by other means, and that it has not advanced to complete destruction of the nerve tubules; and that, even where its advance cannot be thus stayed, temporary good may still be accomplished by suspension. Althaus's ingenious explanation applies equally to other degenerative diseases of the cord than tabes, and if it is true of the chronic degenerations, in which the pathological changes originate in the nerve elements and the overgrowth of connective tissue is secondary, it is, theoretically, far more so of inflammatory processes which, starting in the connective tissue, cause, primarily, at least, far less damage to the nerve tubules. In chronic inflammations of the cord or its investing membranes which are stationary and are encountered before the contracting perineural tissue has, by compression, done more than interfere with the nutrition and conductivity of the fibres, not irreparably damaging their structure, the effect of suspension should be curative; for, by stretching the cord and the thickened and adherent membranes, the inflammatory tissue pressing upon the axis-cylinders will be loosened and broken down, setting free the latter and permitting them to resume their functions.

2620 NORTH FIFTH STREET, PHILADELPHIA.

TWENTY CONSECUTIVE CASES OF ABDOMINAL SECTION, WITH ONE DEATH.¹

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THIS paper embraces the report of twenty abdominal sections taken from the surgical experience of the writer, and are reported simply as a basis for some general remarks on this class of surgery. The cases are taken consecutively, and include the only death I have as yet met with. No case has been refused for operation where there seemed a possible chance for life, and several of them were in such a condition that this chance seemed very small indeed. The general mortality is fully as low as that obtained by Lawson Tait, as reported in his last one thousand cases. Of the operations themselves I have little to say. They have been neither harder nor easier than those of a similar character done by other operators. The fact becomes daily more and more apparent to me, that all abdominal operations, with complications, are difficult; in fact, each new one seems more difficult and delicate than the last. It is impossible to lay down any definite rule of procedure in any class of cases, for the reason that no two are alike; it is simply surprising to find how differently even two apparently similar cases will result. At

¹ Lancet, April 13, 1889.

¹ Read before the Philadelphia County Medical Society, May 22, 1889.

times one has need of all his courage and skill, to meet the requirements and complications of the case.

Seventeen of the list were complicated by adhesions, more or less dense, and the difficulty, nay, almost impossibility at times of breaking these adhesions, have convinced me of the folly of even attempting to cure such cases by either electricity or massage. In some cases, the electricity would have destroyed the surrounding tissues much sooner than it would have even made an impression on the adhesions themselves, so extensive, dense, and organized were they. It is simple unadulterated nonsense to tell me that I could have done with safety, through the thickness of the tissues of the abdominal wall and vagina, that which I was barely able to do with my fingers directly on the disease, and the patient fully anesthetized; and massage, if carried to the extent advocated by some of its votaries, loses even the merit of being harmless, but becomes extremely dangerous. If the patients of the gentlemen who use this remedy (or say they do) will submit to the pain necessarily incident to this treatment, they must be dealing with a much less serious type of cases than it has been my fortune to handle.

In eleven of these cases I have used the drainage tube; nor in any case have I ever regretted its use. On several other occasions I should have used it, but that the after-treatment was conducted by another than myself, the patient residing in the country. In one case the tube was accidentally displaced by the patient, before she was completely from under the influence of the anæsthetic. In this case the adhesions and hemorrhage had been particularly severe, and I was considerably worried over its loss for several days; the convalescence progressed, however, with out any incident worthy of note. I have since then several times done without a tube and depended on purgatives for drainage, with a greater ease of mind, especially in the out-of-town cases. Irrigation with boiled distilled water, and when that has become exhausted, simple boiled water, has been a constant resource and of the utmost benefit. There is absolutely nothing which will take its place for cleaning the abdominal cavity of clots and debris, as well as for its stimulating effect upon the patient. Of late, however, two surgeons have expressed the opinion that the flushing is decidedly dangerous, and base that opinion, each upon one case. Both the patients died after the operation in which warm-water irrigation had been used. The rest of the profession seem to be unanimous in the opinion that irrigation is safe and beneficial.

In the fatal case of M. Polaillon, a French surgeon:

"The patient took chloroform badly, the excited stage was long and she readily came to, though plenty of chloroform, out of a new bottle, was administered on a piece of lint. He employed distilled water, previously

boiled, and containing one part of *carbolic acid* to a hundred.

"During the flushing, respiration became rapid, then grew feeble and ceased; the face became blue. The heart continued to beat regularly. The alarming symptoms began at a quarter past ten o'clock. Artificial respiration was continued till eleven. Then a few feeble respirations began, and continued for a quarter of an hour; the pupils were then half contracted. The heart beat regularly and quickly. The patient continued unconscious. In spite of stimulants, spontaneous respiration could not be permanently maintained. Phlebotomy resulted in the escape of a few drops of very dark blood from the left arm. Gradually the heart's action became more and more feeble, the face grew pale, flatus escaped from the anus, and the pupils dilated. She was thirty-five minutes under chloroform, and about an ounce and a half of the anæsthetic had been used."

Of course, the case died of the chloroform; the history is too complete to admit of any other interpretation, nor do I think for a moment that any one but the operator could think otherwise.

The second case was a patient of Dr. Weir, of New York. Of this case, Dr. Jacobus says:

"How the death of this patient can be, even indirectly, attributed to hot douching, I cannot understand, for it was a case of recurring appendicitis, with several perforations, general peritonitis and partial collapse, operated upon on the fifth day, after having been treated by other physicians, then removed to a hospital and examined under ether, the day previous to the operation."

This is the flimsy evidence on which the objection to irrigation is founded. If surgeons will overdose their patients with chloroform or wait until the eleventh hour to operate, they must expect them to die. I have repeatedly flushed the abdomen to the diaphragm and have yet to see anything but good results. My observations and inquiries amongst my friends have disclosed the same experience without an exception.

A number of these cases were confined to bed with a peritonitis at the time of the operation. All sorts of complications have been met with. In three cases the vermiform appendix had to be freed and then removed on account of its diseased condition. In one, when torn loose, it was found perforated in two places; the appendix was simply ligated and cut away. In none of these cases did any unpleasant symptom arise from this procedure.

The patients have for the most part been operated on at their own homes and in several instances were nursed by their friends. This has, of course, necessitated an enormous amount of extra work for myself; but otherwise they would not have been operated on, having absolutely refused to go to a hospital. The result only helps to emphasize the fact that hospitals are more luxuries than necessities for these operations, notwithstanding the opinion of some operators to the contrary.

In two of these cases there have resulted ventral hernias. In three fistula tracks have followed. A

ligature has recently come away from one of these fistulas and it will now probably close. The other two fistula tracks both followed supra-vaginal hysterectomies.

The after-treatment has been practically, in many cases, nothing. Unless special indications arise they recover without having had a single dose of medicine, excepting sulphate of magnesium, which is generally given on the third day. Until the third day they get nothing to eat. Solid food is given by the fourth or fifth day, if they wish it. If thirst is great, it is relieved by rectal injections, at intervals, of about half a pint of warm water; otherwise tablespoonfuls of soda water are depended on. Opium I have never used and never expect to.

The simpler the details of the operation the better. In ordinary cases my whole armamentarium consists of two ligature needles, two or three suture needles, a knife, a pair of scissors, a sponge-holder, half a dozen hæmostatic forceps, a drainage and an irrigating tube. Pure silk is used both for ligatures and sutures. The dressing consists of a few strips of gauze, a pad of absorbent cotton and a six-tailed bandage. My bag stands near by and contains all other necessary instruments, but it is exceedingly rare that I have to resort to them. The less work done with instruments and the more with the fingers the safer it is for the patient. One often sees operators with six, eight, or even ten pairs of forceps hanging to the sides of the incision. These instruments are not at all desirable and where it is necessary to use them to control hemorrhage, they can safely be removed by the time the peritoneum is opened. It is exceptional that I have a single pair hanging to the vessels when my fingers enter the peritoneal cavity. They crush and bruise the tissues and only tend to prevent good union. In all the details of the preparation for the operation and of the operation itself, the most perfect and rigid attempts at cleanliness have been observed. All instruments, sponges, dressings, etc., used about an operation are prepared by myself, when possible.

It is daily becoming more apparent that inexperienced and untrained men should not be tempted lightly to enter into the abdominal operation. An alarmingly large number of operations have lately come to my notice, by men who have presumably never attempted the procedure before, and who have been assisted by men equally inexperienced and incapable of dealing with possible complications. A considerable number of these cases have, of course, ended fatally—cases which should have all recovered had a skilled operator undertaken them. I do not mean to say that a physician with only a limited experience should never attempt an abdominal operation, because I am very decidedly of the opinion that every surgeon in the land should be prepared in an emergency to open the abdominal cavity

and attempt to deal with what he finds. Our country is so large, and the different settlements and towns so wide apart, that it is an impossibility always to obtain skilled assistance; even where it could be obtained there are times when physicians have no moral right to wait long enough for its arrival. If a tubal pregnancy has ruptured and the patient is bleeding to death, that belly should be opened at once, and by the first man with any respectable amount of surgical experience who may first see the patient. Any physician attending a case of labor, perhaps in the country, may meet with a ruptured uterus, and will give his patient a much better chance for life if he open the abdomen immediately. And so it is with many cases of intestinal obstruction, gunshot and stab wounds. A delay of even a few hours in these cases is responsible for their terrible mortality, and it would be better for any one with good general surgical judgment and skill to open the abdomen, than to leave it unopened or even to delay. It is full time that members of the profession had learned the importance of this and realized their own individual responsibility in allowing such patients to die, without an effort to save them.

But excepting as an emergency and life-saving procedure, I am just as decidedly of the opinion that men without special experience should never open the abdominal cavity, both for their patient's sake and for that of their own reputation. If a simple ovarian cyst is found the operation is easy enough and any tyro could finish it successfully; but just as surely as serious complications are met with both the patient and doctor are in trouble.

I may mention some of the more recent cases of which I am cognizant, which will serve to illustrate some of the points.

CASE I.—A young married woman with a good-sized cystic tumor of the abdomen; in good general health; within one hour's ride of Philadelphia. Operation undertaken by several young men, but without even a good knowledge of general surgery. A long time was wasted in obtaining entrance into the peritoneal cavity. The cyst was found adherent and adhesions bled on being freed. Operation lasted over two hours, and finally ended by leaving it only half finished, with part of the cyst *in situ*. Death on the following day.

CASE II.—Young healthy married woman with cystic disease of abdomen. Operator's first case. Cyst adherent. Bleeding profuse, and large hæmostatics plunged blindly into pelvis in hopes of controlling it. Operation over three hours. Death in a few days.

CASE III.—Young healthy married woman. Unruptured tubal pregnancy diagnosed. Patient lived in a town which could have been reached in a short time by an expert. The ambitious attendant put the woman to bed, took several days to prepare for the operation, and together with four friends opened the abdomen. Operation lasted for five hours; not finished; patient bled to death on the table.

This is the only case of tubal pregnancy I have ever known to be killed by an operation. I could relate many more equally as distressing, but these

cases tell all that is necessary and will justify the remarks I have already made.

There are two complications in abdominal surgery constantly met with, and in dealing with which men show their skill and judgment or display their total unfitness for such work: these are adhesions and hemorrhage. They are, moreover, constant companions; where there are adhesions to be dealt with, there is also nearly always, of necessity, bleeding. Adhesions are not things to be blindly torn loose. In dealing with them, the utmost care and judgment must be constantly exercised, and the almost instinctive knowledge of when to break and when to ligate them, must be ever present. Nor are adhesions things to be afraid of. It matters not how dense they are, it is exceptional that they cannot be successfully disposed of. The man who loses his head and becomes frightened because of tight adhesions, had better never attempt this class of surgery, as

they are almost sure to be met with in greater or less degree.

A careful survey of the whole field should first be taken by the surgeon, for the most part with his fingers, and a decision carefully arrived at as to whether or not it will be possible and safe to remove the disease. The decision once made in the affirmative and the enucleation once begun, it should never, but under very exceptional circumstances, be stopped. The worse results obtained in abdominal surgery are in these unfinished operations. The great danger of this half work was sounded some years ago by Lawson Tait, and is to-day accepted as sound teaching by all who have a right to an opinion on the subject. There is constant danger attending the breaking up of adhesions. One may at any time open an intestine and have the question of a resection to decide; a ureter may be torn out at any moment and a nephrectomy must of

No.	Pathological condition or symptoms.	Drainage.	Adhesions.	Result.	Effect of operation.	Remarks.
1	Pelvic inflammatory disease; ovarian cyst.	No.	Dense and universal.	Recovery.	Great relief from symptoms.	Adhesions so great that it was impossible to reach pelvis; nothing removed. Ventral hernia.
2	Constant local pain; convulsions during menstruation; impossible coition from pain; chronic salpingitis; small cirrhotic ovaries.	No.	Yes.	Recovery.	Only gradual relief; not yet complete; convulsions seldom; coition possible and easy.	From being a chronic almost bedridden invalid, is now able to attend to her household and marital duties.
3	Left puerperal pyosalpinx.	Yes.	Dense and universal.	Recovery.	Cure.	First case of the kind ever operated on in which life was saved.
4	Pyosalpinx.	Yes.	Universal and dense.	Recovery.	Cure.	Three weeks in bed with peritonitis; disease seven years' standing.
5	Cirrhotic ovaries, prolapsed and adherent.	No.	Yes.	Recovery.	Cure.	Relief gradual but complete; convulsive attacks, which were cured.
6	Ovarian cyst; retro-peritoneal cyst; enlarged cirrhotic ovary.	No.	Yes.	Recovery.	Pelvic abscess.	Fourth day walked to kitchen and ate her dinner, sitting at table; out of bed frequently.
7	Pelvic abscess.	Yes.	Yes.	Recovery.	Cure.	Ventral hernia.
8	Fibroid uterus; enormous distention from ascites; hysterectomy, extra-peritoneal.	Yes.	No.	Recovery.	Cure.	Fistula track; ventral hernia; had been tapped eight times.
9	Ovarian cyst; ventral hernia.	No.	No.	Recovery.	Purulent peritonitis.	
10	Purulent peritonitis.	Yes.	Yes.	Death.	Same as Case 9. Lived six days. An earlier operation would have saved her.
11	Double pyosalpinx.	Yes.	Dense and universal.	Recovery.	Cure.	Almost died of hemorrhage on the table.
12	Right pyosalpinx and ovarian abscess; left hæmatocele.	Yes.	Universal.	Recovery.	Cure.	Peritonitis at time of operation.
13	Prolapsed and adherent ovaries, four times natural size.	No.	Yes.	Recovery.	Cure.	For a few months complete cure; lately some pain, probably from adhesions.
14	Fibro-cystic uterus; supra vaginal hysterectomy.	Yes.	No.	Recovery.	Cure.	Fistula track; had been diagnosed and treated for hernia.
15	Extra-uterine pregnancy.	Yes.	Universal.	Recovery.	Abscess.	Of a month's rupture and commencing gangrene.
16	Multiple abscesses.	Yes.	Yes.	Recovery.	Cure.	Fistula track; ligature recently came away, and track will probably close.
17	Left ovarian cyst; right pyosalpinx and ovarian abscess.	Yes.	Universal but light.	Recovery.	Cure.	Had severe attack of peritonitis during convalescence.
18	Right ovarian cyst; left cirrhotic ovary.	No.	Yes.	Recovery.	Cure.	Peritonitis at time of operation.
19	Ovaries greatly enlarged, prolapsed, adherent, and painful.	No.	Yes.	Recovery.	Cure.	Inversion of uterus had been reduced, but constantly tended to re-invert; operation to correct this tendency.
20	Pyosalpinx and chronic salpingitis.	No.	Yes.	Recovery.	Cure.	Right tube adherent to uterus from over fundus to vaginal vault.

necessity follow. I have known of the whole circumference of the sigmoid flexure of the bowel being torn away and a closure of the two ends of the gut necessitated; often the coats of the intestine are torn away down to the mucous lining, and a perforation may occur some days subsequently. The bladder has been opened a great number of times. With these dangers ahead, it can readily be seen why untrained men should keep their hands off, unless absolutely necessary.

In addition to all this, bleeding is constant, as I have said, and may be of two kinds, either venous or arterial. Fortunately, the vast majority of it is simply venous or a general oozing. Where an artery of any size is torn, it must be at once secured and ligated, but otherwise the bleeding had better be left alone or controlled by skilful handling of sponges; it will not be often that this cannot be done. But whether controlled in this manner or not, there is no time to be wasted over it. The very best chance of stopping it is to finish the enucleation quickly and apply the ligature to the pedicle, then there is time and room enough to deal with what may be left, which does not often amount to much. It has lately been proposed and found necessary to throw a ligature around the uterine artery on each side, by passing a threaded needle deep through the sides of the uterus and thus include the artery. I have never seen a case where I even had to think of this procedure, and I have seen some very free bleeding; surely it would take very rough and careless handling often to necessitate a resort to it. However, an uncontrollable case may at times occur, and it is a point well worth bearing in mind. Often the mere bringing together of torn peritoneal edges over a denuded and bleeding surface is sufficient to control an otherwise troublesome point. Much of it may safely be left to the drainage tube. I never like to use styptics when it can be avoided. It is the premature attempt to control bleeding which is often so disastrous. Men find a pretty free flow of blood, and, not being accustomed to it, become frightened and stop everything in the endeavor to control it. This they find oftentimes impossible; the indication then is to finish quickly and stop the bleeding at its root. The pedicle ligature will stop it all, or what is still left is not alarming. Had such been the course pursued in the tubal pregnancy case mentioned, the operation would most probably have been finished and the patient survived. The one redeeming feature of that case is, that the same men and their friends will never be tempted into another such operation; but, unfortunately, the woman's friends and acquaintances will also never be tempted into one. And so indirectly that one case will probably be responsible for the death of half a dozen or more others, who might be saved did they not refuse assistance.

Abdominal surgery, of necessity, has enough legitimate deaths to answer for, without being loaded down by such unnecessary and frightful examples.

NOTE.—Since the above was written I have had a patient die of apoplexy, on the seventeenth day after operation. The case was one of intra-ligamentous papillomatous cyst. Second operation. Had done well from the first. Small quantity of pus from tube. Tube had been perfectly dry and clean for some days, pulse and temperature normal. Said she never felt better in her life. Had slept soundly all night, ate a good breakfast and was talking and joking with nurse when she suddenly had a convulsion; became unconscious and died within twenty minutes. Post-mortem revealed a calcareous condition of the mitral valves of the heart. At the bifurcation of two vessels in the fourth ventricle, a piece of the calcareous plate was found lodged, one of the vessels was ruptured and the ventricle half full of blood-clot. Everything else in the body was healthy. A full report of the case will be shortly published. Of course, I do not consider this a death from operation, but have thought it proper to speak of it in connection with this paper.

328 SOUTH SEVENTEENTH STREET.

MEDICAL PROGRESS.

Excision of the Cæcum.—At the Surgical Congress of Bologna, PROF. DURANTE related a case in which he had removed the cæcum, an operation which he said had been performed only twice before, namely, by Lawson Tait and Billroth. The patient was a woman aged fifty-six, who for four or five years had suffered from obscure pain in the right iliac fossa when at stool. The pain increased in intensity and became paroxysmal, and the patient almost starved herself with the object of sparing herself the torture of defecation. On examination, a resisting tumor was found in the right iliac fossa, extending downward toward the upper outlet of the pelvis. It was only painful during the passage of feces. Cancer of the cæcum or the neighboring parts was suspected, and the abdomen was opened. The tumor, which was as large as a lemon, was found adherent to the iliac fossa, the parietal peritoneum and coils of the small intestine being matted to it so firmly that the lower end of the latter, measuring 25 centimetres in length, together with the cæcum and a portion of the ascending colon, was removed with it. The two ends of the divided intestine were brought together by three rows of suture, namely, an interrupted one through the mucous coat, a hemstitch one through the serous and muscular coats, and a third through the serous coat. The abdominal wound was stitched up, and the patient rapidly recovered without rise of temperature. On the seventh day she had a motion of the bowels without any trouble, and on the tenth day she got up. She has continued ever since in perfect health. The tumor, which had almost completely blocked up the intestine, was found to be of tubercular nature.

DR. TROMBETTA said he had published an almost exactly similar case. There was stenosis of the intestine,

caused apparently by a tumor; he had, therefore, removed the cæcum with the ascending colon and a portion of the small gut, and made an artificial anus. The patient died on the fourteenth day from rupture of the intestine with fecal extravasation. The case proved to be one of typhlitis and perityphlitis, with small abscesses.

DR. BASSINI related a case in which he had removed the cæcum with a portion of the small gut, and from eight to nine centimetres of the ascending colon from a girl aged 22 or 23 for adenoma. Rapid recovery took place.—*The British Med. Journal*, May 4, 1889.

Creolin as an Antiseptic.—Creolin is being actively discussed on the continent at present, as well as in this country. Whether it will stand the test of the rigid examinations to which it is being subjected, remains yet to be seen. The main point of discussion is whether creolin is an antiseptic or not. German authorities seem specially interested, and their opinions are quoted at length in many medical journals.

DR. P. BAUMGARTEN (*Centralbl. f. Bact.*, vol. v., No. 4, 1889) states that he has found it to be a strong animal poison and also an antiseptic, yet only in solutions of a strength that would be fatal to animal life.

DR. BEHRING (*Deutsche militärärztl. Zeitschrift*, 1889, p. 337) comes to the conclusion that creolin possesses antiseptic properties three or four times as weak as those of carbolic acid in solutions of similar strength. A two per cent. solution of creolin will not disinfect wounds. The drug is not so poisonous as carbolic acid.

DR. EISENBERG states that he has found two per cent. to five per cent. solutions of creolin to be powerfully antiseptic; killing almost immediately streptococci, staphylococci, cholera bacilli, and other bacteria. He prophesies a brilliant future for the drug. SEIDEL and HÖRNICKE agree with EISENBERG, and consider ten per cent. creolin gauze or cotton to be an admirable substitute for bichloride gauze. The former preparations may now be purchased in the German market.

HÜNERMANN, as the result of a long series of investigations, states that creolin has no right among antiseptics. It undoubtedly retards and in some cases even prevents the further growth of bacteria, but does not kill them. Koch's experiments have proved that the oil of mustard in weak solutions may hinder the growth of bacteria, yet no one would for a moment regard it in the light of an antiseptic, yet this, he claims, is what is being done with creolin.

DR. KORTÜRN (*Centralbl. f. Gynäk.*, No. 6, 1889) and DR. BUNSEN have tried the drug in obstetrics, and say that they have found it a most admirable antiseptic. They claim that it is not so irritating as carbolic acid, and that it also possesses styptic properties. Kortürn uses wet creolin gauze exclusively for plugging the uterine cavity in cases of severe hemorrhage. For washing the vagina, Bunsen uses only a one-half per cent. solution. He states also that a two per cent. solution immediately kills pediculi pubis.

DR. RAUSCHE (*Deutsche med. Wochenschrift*, April 25, 1889) highly lauds the deodorizing properties of creolin and uses it as an application for burns, superficial wounds, etc. He also advocates its use in the form of creolin soap, for cleansing and deodorizing the hands after operations.

DRS. AMON and PRUTSCHER have used a weak solution of creolin in optic and aural surgery to great advantage.

PURJESZ (*Pester med.-chir. Presse*, No. 11, 1889) treated several cases of suppurative inflammation of the tympanic cavity with creolin with marked success, using five or six drops of pure creolin in a pint of water as a wash. Otitis media was also treated in the same manner with success.

SPATH, PIESKOFF, and others, have used it advantageously in diseases of the throat, nose, and larynx, either in the form of powder of varying strengths, or in glycerine, or as a wash in the following formula:

R.—Creolin	1 part.
Menthol	1 "
Water	500 parts.

Extirpation of the Uterus for Cancer in France.—Views on the treatment of uterine cancer are much divided in this country and Germany. A discussion on the subject has recently taken place at Lyons before the *Société Nationale de Médecine*. DR. DUCHAMP, like Dr. John Williams and unlike most of the German authorities, finds that uterine cancer tends to spread toward the broad ligaments, and not along the endometrium, recurrence after supravaginal amputation of the cervix taking place not in the uterine stump, but in the broad ligament and adjacent connective tissue. This theory is made by the above-named English authority to justify supravaginal amputation in preference to total extirpation.

Dr. Duchamp, of Lyons, on the other hand, begins supravaginal amputation of the cervix as an exploratory operation. In the *Lyon Medical* he states that when the cancerous infiltration has passed beyond the vaginal portion of the cervix, he sets the entire cervix free by dissecting it away from the bladder as high as the level of the utero-vesical pouch, which serous fold, he finds, is "easy to recognize." Then he cuts through the cervix at the same level. When the cut surface appears healthy, he limits the operation to a supravaginal amputation of the cervix. On the contrary, should the wound on the proximal part of the cervix or the cervical canal appear infected, he performs total extirpation of the uterus through the vagina. Dr. Duchamp's four cases, where he extirpated the uterus on the above principles, all recovered from the operation. He admits, however, that in two the broad ligaments were invaded, and the radical procedure was undertaken too late. The first case lived for six months; one ureter had been included in a ligature, ureteric stricture resulted, and the patient died of uræmic convulsions. The three remaining cases were all subjected to operations within five months of the publication of Dr. Duchamp's paper, so no conclusions respecting recurrence can yet be drawn from them.—*The British Med. Journal*, May 4, 1889.

Treatment of Diphtheria.—DR. RENVERS, one of Leyden's assistants, gives the following outline as his usual treatment of diphtheria:

1. Antiseptic washing and disinfection of the mouth and throat every two or three hours. Ice pills may be given, and inhalations are also of value.
2. Little or no medicine need be given internally, and even when high fever exists the use of antipyretics is to be avoided.

3. Complete rest is indispensable to the patient. Constant washing of the mouth and long gargling are only weakening and of little value.

4. Morphine, if used with caution, will be found invaluable. No other drug seems to quiet the patient so quickly and give such refreshing and strengthening sleep. The dose used should always be small, varying from one-twentieth to one-sixth of a grain.

5. The nourishment of the patient is of special importance. If there be any difficulty in swallowing, or if the patient refuses food, artificial feeding should at once be resorted to. The diet should be strong, consisting of half pint of milk, three times a day, together with the yolk of two or three eggs, an ounce of sugar, and about three ounces of sherry wine.—*Münchener med. Wochenschrift*, April 23, 1889.

Salicylate of Mercury in Blennorrhagia.—PROF. SCHWIMMER (*Wien. med. Wochenschr.*, No. 8, 1889) has met with great success in treating blennorrhagia, both acute and chronic, with injections of salicylate of mercury. He suggests the following formulæ:

1. In acute blennorrhagia,

R.—Dist. water 3iijss.
Salicylate of mercury $\frac{1}{2}$ grain.—M.

Three injections should be made daily, and the treatment continued for two or three days, in about which time the discharge will cease.

2. In chronic blennorrhagia a stronger solution can be used:

R.—Water 3iijss.
Salicylate of mercury $\frac{3}{4}$ grain.—M.

In chronic cases the treatment should extend over a period of six or seven days, and in some stubborn cases even this is not sufficient. The solution has no irritative properties.—*Journal de Méd. de Paris*, April 21, 1889.

Surgical Treatment of Tubercular Peritonitis.—PROF. CECCHERELLI, in a paper read before the Surgical Congress at Bologna, described four cases of tubercular peritonitis in which he had performed laparotomy, washed out the peritoneal cavity with a solution of thymol, and powdered it with iodoform. In the first, a woman, aged twenty-eight, who, after suckling her fifth child, began to suffer from loss of appetite and swelling of the abdomen, the surface of the peritoneum was found reddened, œdematous, and studded with tubercles, whilst the cavity contained a large amount of fluid. Up to the date of the report (six months after the operation) she had remained well.

The second case was that of a boy, aged eleven, in whom slowly increasing ascites was the only symptom. The peritoneum was covered with tubercles. The operation got rid of the ascites, but a month later it had collected again, and laparotomy was done a second time with some benefit as regards the ascites; there were, however, signs of consolidation at one apex.

In the third case, that of a boy of thirteen, numerous firm adhesions infiltrated with tubercles were found; there was some improvement when he left the hospital, but a month later the belly had enlarged, there was dulness in the iliac region, and a feeling of hardness and resistance on palpation.

The fourth case was that of a girl aged eight, who had been ill for only a month, and who had dulness and harsh breathing at the right apex. The peritoneum showed thickened adhesions infiltrated with tubercles. Cultivation experiments gave negative results in this case as well as in the third, but in all the cases the specific microbe was seen with the microscope.

Prof. Ceccherelli thought the second case especially important, as the condition of the peritoneum found at the second operation showed the manner in which cure took place. Whilst the pieces of peritoneum removed in the first operation were studded both superficially and deeply with innumerable tubercles, those taken away at the second laparotomy showed none at all in some places, and in others the tubercles were surrounded by a covering of connective tissue of recent formation. Up to the present time, abdominal section for tubercular peritonitis had been performed by various operators in 88 cases with 52 cures and 25 deaths, whilst in 6 there was some improvement, and in five the result was unknown. Rabbits inoculated with the mesenteric glands of persons who had died of tubercular peritonitis developed purulent peritonitis, whilst the introduction of shreds of peritoneum obtained by laparotomy caused death in some rabbits. Prof. Ceccherelli had made a series of such experiments, and in all the rabbits on which he had succeeded in producing tubercular peritonitis he had performed laparotomy; the result would be published when the series was complete.

His present experience led him to the following conclusions: There are two forms of tubercular peritonitis, the dry and the ascitic. In the former case laparotomy is useless, because, owing to adhesions which it would be unsafe to break down, the peritoneal cavity cannot be explored. In the ascitic form of the disease laparotomy is of service, as it allows the cavity to be emptied, and excites adhesive peritonitis with fibrous transformation of the tubercles. Prof. Ceccherelli's views found little favor with his audience, Prof. Durante expressing the belief that whatever benefit was produced was merely temporary, and Drs. Bassini and A. Ferrari citing cases within their own knowledge in which patients had died of pulmonary phthisis from six months to two years after laparotomy.—*The British Med. Journal*, May 4, 1889.

Treatment of Tubercular Processes with Balsam of Peru.

—PROF. ALBERT, in a lecture delivered before a medical society in Munich, spoke most highly of the efficacy of balsam of Peru as an application after operations for local tuberculosis. In all cases in which it was applied to the wound, healing was effected by first intention, and the tuberculous process was checked. In two cases, however, the action of the drug on the kidneys was decidedly unfavorable, it producing nephritis. Albert lays great weight upon using only the pure drug; many impure articles, he says, are brought into commerce under the same name.—*Münchener med. Wochenschrift*, April 16, 1889.

The Treatment of Chapped Nipples.—At University College Hospital, London, the favorite remedy for chapped and sore nipples is glycerine of tannin and sulphurous acid, each half an ounce, with one ounce of water.—*The British Med. Journal*, May 11, 1889.

THE MEDICAL NEWS.

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SATURDAY, JUNE 1, 1889.

THE TREATMENT OF HYDROCELE.

SEVERAL years ago it was thought that the treatment of hydrocele of the tunica vaginalis had been settled: that the best palliative treatment was simple aseptic tapping or aspiration; that the most safe and successful of the non-operative attempts at radical cure by obliteration of the sac was to be found in the injection into its cavity of iodine; and that absolutely safe and certain permanent cure could always be obtained by strictly aseptic incision and prolonged drainage.

That tapping is the best palliative measure still remains unquestioned, but not so with the other methods which we have mentioned, for Levis has urged the substitution of carbolic acid for iodine, and many operators have condemned the open drainage method from its infective risks, whilst others have strenuously urged the excision of the sac in all cases.

Of those who have made clinical comparisons of the various methods for the radical cure of hydrocele, probably none has exceeded in experience PROF. HELFERICH, of Greifswald. He, after experimenting on a very large scale, has (*Therapeut. Monatshefte*, Heft 3, 1889) returned to the above-mentioned tenets, which, as we have already said, several years ago were maintained by those most competent to judge.

Helferich at first had remarkably good results with the Levis method, but larger experience has

made him change this view, for he has found iodine, though more painful than carbolic acid, decidedly more certain in effect, more speedy in point of return of the parts to natural condition, and less often followed by undesirable consequences.

Aseptic drainage is thought by him to be practically safe in the hands of an intelligent surgeon, and under these circumstances invariably certain. Bad results and relapses are not uncommon, it is true, but should we abandon all things which in ignorant hands may prove unfortunate, if, when applied by those who are competent, they are invariably followed by excellent result?

Nancrede has recently reported (*MEDICAL NEWS*, May 18, 1889) two cases, one from his own practice and one from that of Dr. J. M. Barton, of this city, in both of which, after failure of the iodine injection method, incision and drainage were performed and a small cartilage-like concretion found floating free in the sac. As Nancrede pointed out, these loose bodies in the cavity or wall of the tunica vaginalis are considered great rarities, but he offers the tentative theory that perhaps they are by no means so rare as we now imagine, and that possibly they are responsible for some of the failures met with by the injection method. The cases reported by Nancrede were afflicted with violent pains in the testicles when in a standing position, but these in both disappeared after the incision, finding and removal of the loose body, drainage, and subsequent absolute cure of the hydrocele.

The possibility of these bodies being present, especially when the injection method has failed and when pain in the testicles is complained of, offers another indication for incision and drainage; also an imperative reason for carefully exploring the tunica vaginalis in all cases so operated upon.

Excision of the sac, we are glad to find, is condemned by Helferich. It is an unnecessary and unsurgical procedure; accomplishing results no better, and often not even so good as simple drainage, and is attended with many risks not otherwise encountered.

MR. MORRIS (*Proc. Royal Med. and Chir. Soc. of London*, 1885-88, ii. 342) also has recently taken occasion to criticise unfavorably the operation of excision of the hydrocele sac.

The former status of the treatment of hydrocele may, therefore, be said to have remained unchanged by the large amount of clinical experimentation which during the past few years has taken place,

and that the spirit of the surgical world is that (1) aseptic tapping is the best palliative measure; (2) iodine injection is the most reliable non-cutting radical treatment; (3) aseptic incision with drainage is an invariably certain and safe procedure, and always to be preferred where choice lies with the surgeon.

THE PREVENTION OF DIPHTHERIA.

ONE of the most important practical bearings of modern bacteriological study is upon the subject of the prophylaxis of disease. Definite knowledge of the nature and biological characteristics of the exciting cause of any infectious disease enables us to direct our efforts at its prevention intelligently; we must destroy the specific microorganism involved. Our knowledge of the exciting cause of cholera, tuberculosis, and typhoid fever thus enables us to combat the spread of these diseases with a directness of purpose and assurance of success formerly quite impossible.

PRUDDEN's careful investigation into the cause of diphtheria, the results of which have appeared in *The American Journal of the Medical Sciences* for April and May of this year, has added another to the list of diseases of which it may be said that the specific cause is known. We now know the exciting cause of diphtheria to be the streptococcus diphtheriæ, we know what will kill this germ, and its destruction is the definite end to be attained if we are to prevent the spread of the disease.

One of the greatest obstacles to real progress in the prevention of disease in this country is the persistence with which inefficient methods of disinfection are adhered to. The old sulphur fumigation is an example of this. So long as its use is advocated by our health officers it must be in vain that rational measures are recommended. The ease of its employment, coupled with the popular belief that it is all-efficient, makes it almost impossible that methods more difficult of application, though of established efficiency, should be introduced while its use is continued. It has repeatedly been shown that sulphurous acid gas does not destroy *all* germs, and Prudden has repeated the proof of its inefficiency so far as regards the specific microorganism of diphtheria. Notwithstanding all this, the New York State Board of Health, in a bulletin issued last week in regard to the prevention of diphtheria, places its main reliance on sulphur fumigation.

If we are to combat successfully the dissemination

of disease, we must use only such means as are of known efficiency. All germs in each case must be destroyed. The prevention of each disease is a special problem, but we are, fortunately, in possession of two germicides which have thus far been shown to be efficient—carbolic acid and corrosive sublimate. These are unquestionably more difficult of employment than sulphur fumigation, but, while this may be regretted, it should not be an obstacle to the use of the more efficient agents, as fully described by Prudden in the article above referred to.

MIXED ANÆSTHESIA.

THE method of producing insensibility by the conjoint administration of narcotics and anæsthetics has been before the profession for a quarter of a century, but has never come into general use. It was originally recommended by Bernard, who found by experiment on animals, and his conclusions were subsequently confirmed on man, that when the administration of the narcotic preceded by some little time that of the anæsthetic, the amount of the anæsthetic required is less, that there is far less excitement attending the inhalation, and that there is less vomiting afterward. The narcotic, moreover, antagonizes the paralyzing action of the anæsthetic on the cardiac and respiratory centres and prevents subsequent shock.

In this country the mixed method was advocated by Dr. J. C. Reeve as early as 1876 (*American Journal of the Medical Sciences*), but it has never, neither here nor abroad, received the appreciation or attracted the attention it deserves. MR. ERNEST HART, in some recent notes on "Medical Paris" (*British Med. Journal*, May 11, 1889), states that for the last ten years the method has been used at the Sorbonne in anæsthetizing animals for experimentation, and without a single accident, whereas with the ordinary method the mortality from chloroform was one animal in three, and sometimes even greater.

The mixed method, as generally used in the human being, consists in injecting hypodermatically from $\frac{1}{4}$ to $\frac{1}{2}$ gr. of morphia and $\frac{1}{10}$ to $\frac{1}{8}$ gr. of atropia from fifteen to twenty-five minutes before the inhalation of the anæsthetic, just long enough for the effect of the narcotic to be fully felt by the nervous centres. In the production of artificial anæsthesia, and especially in cases of prolonged and severe operations, mixed anæsthesia appears to be most important for the comfort and safety of the patient, and is deserving of more general use.

THE advisability of removing the Medical Department of the University of Michigan from Ann Arbor to Detroit appears to be a question which is deeply agitating the profession of the two cities, and its correct solution is claimed to be of far-reaching importance to the interests of medical education in that State. *The Medical Age* has invited the opinion on the subject of prominent members of the profession in the State, and so far as they have yet replied they are stated to indicate a preponderance in favor of removal to Detroit.

At their recent commencements the degree of Doctor of Medicine was conferred on graduates as follows:

Memphis Hospital Medical College . . .	63
Long Island College Hospital . . .	47
McGill University, Montreal . . .	38
Omaha Medical College . . .	7
University of Southern California . . .	2

DR. HOWARD A. KELLY, of Philadelphia, has been appointed Gynecologist to the Johns Hopkins Hospital, and has resigned the Associate Professorship of Obstetrics in the University of Pennsylvania, to which he was elected a year ago. Dr. Kelly goes to Europe for the summer, and will enter upon his duties in Baltimore upon his return.

We understand that the vacancy at the University of Pennsylvania created by Dr. Kelly's resignation is not likely to be filled, but the work of the chair will probably be consolidated, and that in that event the duties will devolve upon Dr. Barton C. Hirst, the present Associate Professor of Obstetrics.

DR. CARLOS T. MACDONALD, Superintendent of the New York State Asylum for Insane Criminals, has accepted the appointment of President of the New York State Commission in Lunacy. Dr. Henry E. Allison, Assistant Physician of the Asylum at Ovid since 1877, has been appointed as his successor at the State Asylum at Auburn.

A NEW hospital building has been completed at New Brunswick, N. J., and handed over to the authorities having the management of the old City Hospital, who will abandon the rented building formerly occupied, and make a change of name to that of the John Wells Memorial Hospital. The new structure is the gift of Mrs. John Wells, who has caused it to be erected in memory of her deceased husband.

SOCIETY PROCEEDINGS.

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in the Army Medical Museum, Washington, May 14, 15, and 16, 1889.

(Concluded from page 584.)

WEDNESDAY, MAY 15TH.—MORNING SESSION.

DR. J. COLLINS WARREN, of Boston, read a paper on
THE EARLY DIAGNOSIS OF MORBID GROWTHS.

Reference was first made to the great desirability of some means of making an early diagnosis in cases of possible malignant disease. The attempt to make a microscopical examination of morbid growths before their removal dates back to the earliest period of microscopical histology. The pain and danger of inflammation attending the methods adopted led to their abandonment. Antiseptic surgery, however, now enables us to perform such an operation almost with absolute certainty of absence of inflammation. Local anæsthesia with ether spray or cocaine renders the exploration free from pain. The instrument which the author employs consists of a small canula sharpened at the end. The calibre of the instrument varies from two to five millimetres. The instrument is used by gently rotating the canula between the fingers. After the instrument has penetrated the tumor to the desired depth it is withdrawn a short distance, and then entered obliquely so as to cut off the column of tissue. The piece removed may be as large as 5 mm. in diameter and 3 cm. in length, or even longer. The fragment can be at once examined by means of the freezing microtome or placed in alcohol and hardened. The operation can readily be performed at the physician's office and immediate diagnosis made. Several cases were reported illustrating the information obtained by the use of the canula. The instrument has been used in over one hundred cases, with little or no discomfort to the patient and with satisfactory results. It has been used in abdominal tumors; it has been used in one or two growths involving the abdominal parietes and peritoneum, but not in deep-seated organs. The object of the author in bringing the results of his observations before the Association was to show that modern improvements have made an old and discarded method not only practicable, but a valuable addition to our means of surgical diagnosis.

DR. F. S. DENNIS, of New York, protested against reliance upon this instrument in the diagnosis of malignant disease. He had never found pathologists willing to base a diagnosis of malignant disease upon the shreds of tissue removed by such instruments. More reliance is to be placed upon the clinical features than upon the microscopical appearances. Among these are age, situation of the tumor, the macroscopic appearance, pain, cachexia, lymphatic enlargement, hereditary influence, and finally, the use of the harpoon. While the harpoon or canula is a useful adjuvant, we cannot rely upon it absolutely in making the diagnosis.

DR. P. S. CONNER thought that there is nothing more definitely established than the difficulty of relying absolutely upon the microscopical examination in cases of supposed malignant disease. It is confirmatory testimony of great value. In the instrument presented we

have an additional aid to our means of diagnosis. While the points presented by Dr. Dennis are valuable, they do not aid much in the early diagnosis.

DR. R. A. KINLOCH, of Charleston, said that it is a well-established surgical principle that all tumors should be removed, so that the early diagnosis is, perhaps, not so essential. The question arises, whether it would not be better to remove the tumor and make the diagnosis of its nature afterward.

DR. W. H. CARMALT, of New Haven, said that in carcinoma and sarcoma the clinical features are, to his mind, a great deal more important than anything we can obtain from the microscope. Microscopical examination of different parts of the same tumor may present different appearances. Another point in regard to the use of the canula is the danger that the irritation excited by the instrument may convert a benign tumor into a malignant growth.

DR. WM. H. RICHARDSON had seen this instrument used in many cases without bad effect, and the microscopists consider that they derive valuable information from examination of the plugs of tissue removed. A correct diagnosis cannot be made in the earliest stages of malignant disease from the clinical evidence alone, and it seemed to him that in the early diagnosis this instrument affords valuable aid.

DR. L. McLANE TIFFANY, of Baltimore, then reported a case of

FREE DIVISION OF THE CAPSULE OF THE KIDNEY FOR THE RELIEF OF NEPHRALGIA.

Four years ago he suggested the use of incision of the capsule of the kidney in the treatment of nephralgia. The patient, a woman, aged forty-nine years, white, married, had had gonorrhoea and syphilis. She had had abscess of the pelvis opening by the vagina, the discharge continuing for two years. Three years ago she experienced in the right loin sudden severe pain, lasting for a moment. It was supposed to be due to passage of a kidney stone. The attacks recurred at irregular intervals, the periods becoming progressively shorter, and the pain more intense. No calculi had ever been voided. Blood had been seen at rare intervals. The pain always began in the right loin midway between the pelvis and the ribs. It then extended toward the middle line of the body and down to the bladder and groin on the right side. Exertion was apt to induce it. Pressure over the right kidney caused acute pain, but no tumor could be made out. The urine was moderately acid, sp. gr. 1022, contained pus cells, and a few red blood-disks. There was no rise of temperature during the attacks.

The operation was performed January 12, 1889. The kidney, when exposed, moved freely during respiration. A deep stellate scar existed in the kidney, two inches from the lower end. No other abnormality was discovered. A sound was passed into the pelvis and a systematic exploration made, but no stone was detected; the capsule was then freely slit open for three inches, the edges of the cut gaped widely. The wound was then closed and an aseptic dressing applied. No urine passed by the lumbar wound. This soon healed, and since the operation, a period of four months, there had been no attacks of nephralgia.

DR. THEODORE A. MCGRAW, three months ago, operated on a woman on the supposition that there was a

renal calculus. None was found, but the capsule was freely slit, and, since the operation, there has been no return of pain.

DR. F. LANGE, of New York, in one case of severe pain recurring at irregular intervals, operated with the expectation of finding a stone in the kidney, but none could be detected. He then proceeded in the manner described. The patient remained free from pain for three or four months, but the attacks then reappeared.

DR. W. W. KEEN, desired to refer to one source of error in the diagnosis of renal calculi which had not been mentioned. He recently operated on a case of tumor of kidney in which the needle, when it was passed into the substance of the organ, gave a distinct impression of coming into contact with a stone. The tumor was malignant and so adherent that it could not be removed. Subsequent examination showed that there was no calculus and that the needle must have come in contact with a calcareous vessel, of which there were several, or a mass of calcareous matter which was present.

DR. JOHN HOMANS, of Boston, recently operated in a case on a boy of fifteen years, who had a large swelling in the perineum. He removed by perineal section thirteen stones from the urethra, which would admit his forefinger. There was also a swelling in the loin which did not disappear after the operation. Three weeks later he opened the kidney through the right loin. He found a considerable quantity of pus but could detect no stone, although he was not sure that a stone was not present.

DR. J. M. BARTON, of Philadelphia, then read a paper on

DIGITAL DIVULSION OF THE PYLORUS FOR CICATRICAL STENOSIS.

(See THE MEDICAL NEWS, May 25th, page 561.)

DR. R. A. KINLOCH had had no personal experience with this operation, but he could not understand how an organic stenosis of the pylorus is cured by a single dilatation. This is not the case with organic stenosis in other parts, as the rectum and the œsophagus. He was inclined to believe that where the benefit has continued for any length of time, the organic change has been slight. He could understand how benefit could be expected if the wound were kept open and the stricture systematically dilated.

DR. J. EWING MEARS, of Philadelphia, said that while it might not be easy to explain the results obtained by digital divulsion of the pylorus, there could be no question as to the beneficial results. The evidence of reliable operators certainly indicates that it is a proper operation and attended with successful results. This operation should always be performed in preference to pylorotomy.

AFTERNOON SESSION.

DR. THEODORE A. MCGRAW, of Detroit, presented

A CONTRIBUTION TO THE HISTORY OF GUNSHOT WOUNDS OF THE ABDOMEN.

Reference was first made to a case of gunshot wound of the abdomen operated on by Dr. R. Abbe, of New York, July 8, 1886, in which four hours after the accident adhesions of the intestine to the abdominal wall were found, forming a cavity containing extravasated feces.

The adhesions were broken up, and four holes in the bowel and one in the bladder were closed. Suppression of urine and death followed. In August, 1887, the author was called to a case of gunshot wound of the abdomen, fourteen hours after its occurrence. At the operation it was found that adhesions had formed shutting off the peritoneal cavity. These were broken up and eight perforations of the bowel found; five of these had become so occluded by lymph as to be detected with difficulty, and no discharge could be forced through them. Four feet of the ileum were excised. The patient died twenty-six hours after the operation. A study of these cases led him to suggest that under such circumstances the drainage of the cavity would be the best plan to adopt. The artificial anus or fecal fistula could then be operated on at a later period. The question arises, whether or not these cases of early agglutination are sufficiently numerous to warrant our making them the point on which the treatment of all cases of penetrating wounds of the abdomen over six hours old must turn. This question cannot be decided at present.

A review of the approved methods of treating gunshot wounds of the abdomen was then taken up. The great danger has been shock. The shock has depended, 1st, upon the time occupied in operating; 2d, upon the amount of evisceration; 3d, upon the number and nature of the injuries to be repaired; 4th, upon the chilling of the intestines; and, 5th, possibly upon the long-continued anæsthesia. In discussing the subject the following propositions were considered, many of them based upon experiments upon dogs and sheep:

1. The gravity of an injury of this kind depends partly upon the size of the missile.
2. Gunshots which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance, through the peritoneum, to that of exit or to their final stopping-place in the viscera. All apparent deviation of bullets fired into the abdomen, from a direct path, are due to changes in position subsequent to the shooting.
3. An incision made directly in the course of the ball, will give the shortest route to the injured viscera.
4. The contents of the bowels may be made to discharge through an open gunshot wound by manipulation and pressure.
5. An empty condition of the alimentary canal is most favorable to healing. To secure this it may be proper, in some cases of injury of the bowel immediately after a hearty meal, to evacuate the contents of the stomach by means of a siphon.
6. Agglutination and limitation of the morbid processes consequent upon gunshot wounds may take place as early as the sixth day.
7. Senn's method of hydrogen gas insufflation, however admirable in recent cases, should be used with great caution in cases four hours old, and especially in those made by small bullets.
8. The dangers of the operations for penetrating gunshot wounds of the abdomen are directly in proportion to the length of the operation and to the amount of the evisceration. The duration of the operation may be lessened: 1st. Making the incision on the line taken by the ball; or, if it has passed from before backward, over the point of entrance. 2d. By limiting the examination of the viscera strictly to such of them as may have been

in the course of the ball. 3d. By suturing wounds of the intestine wherever it is possible, instead of excising them. 4th. By omitting all operative procedures, even suture, in wounds which have become so thoroughly occluded by plastic material that the contents of the bowel cannot be pressed through them. 5th. By operating first on those wounds which imperatively demand it, and leaving to the last those which may recover without operation. 6th. By never eviscerating a patient, except, first, when hemorrhage is otherwise uncontrollable; and, second, when there is evidently a discharging wound which cannot otherwise be found. The evisceration of a patient is as dangerous as any gunshot wound of the intestine which cannot be made to discharge its contents by manipulation or pressure can possibly be. There are cases where evisceration is necessary, but the author protested earnestly against the habit of eviscerating patients suffering from gunshot wounds of the abdomen as a matter of routine. We are not warranted in turning a man inside out and subjecting him to frightful danger in the mere fear that there may be still an undiscovered wound, when all the symptoms which ought to indicate such a wound are absent.

9. In cases of those wounds in which the patients may be too weak to endure any radical operation for their repair, efforts for their relief may be made by incision and drainage, and in some cases by attaching the injured intestines to the abdominal wall, as in gangrenous hernia. This procedure occupying but little time and making no draft upon the strength of the patient, may offer a hope of recovery which would not be possible under the expectant mode of treatment.

DR. D. W. YANDELL said that the statement in regard to the course of balls was new to him. A number of cases which he had seen had led him to believe that balls entering the abdomen might deviate very greatly. He was not altogether prepared to accept the statement at present. In one case in which the pistol held near the individual and in a straight line, the ball entered above the symphysis pubis and was found below the spleen, having wounded the intestines in its course. The recommendation that in extreme cases, where the patient is greatly exhausted, the wounded intestine be secured at the abdominal incision, is certainly conservative, and it seemed to him wise.

DR. C. B. NANCREDE, of Philadelphia, said that there are such a number of cases on record in which it was supposed that the balls were deflected, that he thought there could be no doubt that this occurs occasionally. In regard to the incision: from his experience with both the median and the lateral incision, he was forced to the conclusion, that unless we are certain that the bowel has followed an antero-posterior course, the median incision is to be adopted in every case with rare exceptions. He supposed that Dr. McGraw meant by evisceration, removal of the intestine *en masse*. It makes a great difference as far as shock is concerned, whether the intestines are removed all together or simply an inch brought out of the opening, immediately replaced and another portion examined, at no time exposing a large portion of the bowel. So many cases have been recorded in which death was the direct result of overlooking a single wound of the viscera or bloodvessels, that the only safe rule is to make a thorough examination before closing the abdominal viscera.

DR. J. EWING MEARS thought that the median incision is the one which should be adopted. It can be extended any desired distance, which cannot be done with the lateral incision. By the median incision the entire abdominal cavity can be inspected. In regard to what has been termed evisceration, he thought that it is better to permit the patient to die without operation than that an incomplete or imperfect operation should be performed, and that the surgeon would be almost criminally culpable if, after subjecting the patient to the dangers of an abdominal section, he closed the abdomen without satisfying himself by thorough examination that he had found every wound that had been inflicted.

DR. R. A. KINLOCH thought that after the abdomen is opened in a search for wounds every wound should be closed. We cannot say that one wound is of less importance than another.

DR. W. W. KEEN thought that, as regards the line of incision, we should make a distinction between stab wounds and gunshot wounds. In the former case the incision should be made at the point of the wound, while in the latter the almost invariable rule should be the median incision. He agreed with previous speakers that after we have opened the abdomen no case is properly treated if we leave by any possibility a single wound unsutured.

DR. C. H. MASTIN said in regard to the course of balls, that he had treated one case in which the ball entered one inch to the right of the umbilicus, made nine openings in the intestine, passed down through the bladder, out through the prostate, and lodged near the tuber ischii on the left side. The spinal column had not been injured.

DR. F. S. DENNIS, of New York, believed that it is a rule without exception that the median incision should be made where we are going to sew perforations in the bowel or stop hemorrhage in the abdominal cavity. The point of first importance is the control of hemorrhage. The median incision will permit the surgeon to enter the peritoneal cavity in half a minute.

DR. STEPHEN H. WEEKS had not heard any allusion in regard to the use of Dr. Senn's method. He laid stress upon two points: first, the use of the gas in determining whether perforation had occurred; and, second, in locating the openings in the bowel. This latter seemed to him a valuable point.

DR. STEPHEN H. WEEKS, of Portland, Me., then read a paper on

DRAINAGE AND DRAINAGE-TUBES IN THEIR APPLICATION TO THE TREATMENT OF WOUNDS.

He first referred to the great importance of drainage, and after alluding to the various methods proposed for securing it, described a new form of absorbable drainage-tube prepared from the arteries of animals. The arteries used are those of the ox. They are separated from their sheaths, cut into tubes four or five inches long, and then boiled in water for about five minutes. This sterilizes them and hardens their coats. Holes are next cut in their sides, and they are passed over glass rods of different sizes, according to the size of tube desired. They are now placed in corrosive sublimate solution 1 to 100, and allowed to remain ten minutes. Then they are placed in alcohol 95 per cent., and at the end of twenty-four or forty-eight hours the glass rods

are removed, the tubes being kept in alcohol until needed. These tubes are unirritating to the tissues; they are absorbed in from five to seven days, and drain the wound perfectly.

THURSDAY, MAY 16TH.—MORNING SESSION.

DR. JOHN HOMANS, of Boston, reported

A SUCCESSFUL CASE OF NEPHRECTOMY FOR REMOVAL OF CANCER OF THE RIGHT KIDNEY.

The patient, a woman of fifty, for a year had suffered with frequency of micturition. The urine had been dark and bloody at times. For three years she had suffered from indigestion. The tumor had been discovered in 1887, in the right iliac region, and since July, 1888, it had grown rapidly. It filled the right iliac region and more or less the umbilical and pubic regions. On palpation, large irregular nodules were felt, and in some parts there was fluctuation. Laparotomy was performed January 21, 1889. The incision was made in the linea alba, and was four inches in length. The tumor was exposed, and in the upper part were seen the remaining portion of the kidney and two large renal veins. These were tied with silk, the ureter was next tied and divided, and then the pedicle was readily ligated. The tumor was removed, a glass drainage-tube introduced, and the wound closed and dressed with iodoform gauze and absorbent cotton. The tumor measured six by nine inches and weighed fifty-three ounces. There was very little shock. The amount of urine since the operation has risen from ten to fifty-seven ounces, and has been gradually increasing. There was but little discharge from the drainage-tube, which was removed on the fourth day. One month after the operation an abscess was opened in the right lumbar region. A slight swelling and some tenderness still remain in the right loin. Whether these are wholly inflammatory or due to a recurrence of the growth cannot at present be determined. The patient is rapidly gaining strength. His experience led him to say that a large renal tumor which cannot be diminished in size by tapping (he would consider one weighing a pound or more a large tumor) can most conveniently be removed by an incision through the linea semilunaris or in the linea alba. Small tumors and those that can be diminished may be removed by the lumbar incision. In cases of moderate-sized kidneys, disorganized with pus or tubercular, or containing calculus, the lumbar incision is preferable.

DR. FREDERICK E. LANGE, of New York, said that in cases in which a large tumor of the kidney is to be removed, and it is desirable not to open the peritoneal cavity, he had found a trapdoor incision with exsection of one or two ribs, if necessary, gave ample room for operation. He had operated nine times, but never for neoplasm. With free incision and open antiseptic after-treatment, he regarded extirpation of the kidney, even in cases of large tumors, a comparatively safe operation.

DR. M. H. RICHARDSON said that there is a frequent anomaly of the vascular supply of the kidney which should be borne in mind in operations. Instead of one renal artery there may be three or even four arteries. If such a pedicle is ligated *en masse*, there is danger of slipping of the ligature and hemorrhage. This is obviated by tying the pedicle in several sections.

DR. LEWIS S. PILCHER, of Brooklyn, then read a paper on

THE QUESTION OF THE ANTI-TUBERCULAR POWER OF IODOFORM, WITH A SUGGESTION FOR A MORE EXACT CLINICAL TESTING OF THE SAME.

The paper first called attention to the different results obtained by the application of iodoform to tubercular tissues, according as the results were derived from clinical experience or from observations on tubercular affections artificially induced in animals. The following case was a contribution to the study of this question.

A girl, aged thirteen years, with a family history of tuberculosis came under observation with an infiltrated and ulcerated patch on each leg; there was also on each thigh an infiltrated patch without ulceration. The disease was of three months' standing. The diagnosis of tuberculosis of skin was made. The patch on the right leg was excised and microscopical examination confirmed the diagnosis; tuberculous nodules with bacilli were found. The patches on the thighs were also excised and healed without further treatment. Bismuth was applied to the patch on the right leg and healing progressed satisfactorily. It was then determined to apply skin-grafts. The sore was curetted, the grafts applied and did well for a time. Later the epithelial elements broke down and a number of small ulcers formed. At the base of each ulcer was found a particle of bismuth. Portions of the tissue removed, however, showed no bacilli. No iodoform had been employed. Boracic acid ointment and the occasional application of nitrate of silver were now ordered. The ulcer on the left leg was curetted Dec. 10, 1888, sprinkled with iodoform and covered with absorbent cotton. It rapidly healed and on Jan. 25th a wedge-shaped piece was removed and examined. It was entirely free from evidences of tuberculosis. A soft natural skin has since formed.

The committee appointed to take action in regard to the

DEATH OF DR. S. W. GROSS,

presented the following:

Whereas, it has pleased the Almighty to remove from our midst, Dr. Samuel W. Gross, who assisted in founding the American Surgical Association and contributed by his example and work largely to its success, who as a teacher was enlightened and impressive, as an author was accurate and original, as a surgeon was sound in judgement, rich in clinical experience, skilled in manipulation, and as a Fellow was genial and courteous; therefore, be it

Resolved, that the Association deplores his death as an irreparable loss, and directs that a copy of the foregoing be spread upon its minutes and forwarded to his bereaved family.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

- President*.—D. W. Yandell, M.D., of Louisville.
Vice-Presidents.—Claudius H. Mastin, M.D., of Mobile; C. B. Nancrede, M.D., of Philadelphia.
Secretary.—J. R. Weist, M.D., of Richmond, Ind.
Treasurer.—P. S. Conner, M.D., of Cincinnati.
Recorder.—J. Ewing Mears, M.D., of Philadelphia.

Council.—Drs. John S. Billings, L. McLane Tiffany, W. F. Peck, and F. S. Dennis.

Chairman of Committee of Arrangements.—J. S. Billings, M.D., of Washington.

The following were

ELECTED MEMBERS:

Drs. Stephen H. Weeks, of Portland, Me.; Robert F. Weir, of New York; John Homans, of Boston; Lewis A. Stimson, of New York; Fredrick E. Lange, of New York; Lewis S. Pilcher, of Brooklyn; Levi Cooper Lane, of San Francisco; Arthur T. Cabot, of Boston.

The Association then adjourned to meet in Washington on the second Tuesday in May, 1890.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

THE PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

Stated Meeting, May 8, 1889.

DR. ROBERT ABBE, of New York, read a paper on

INTESTINAL ANASTOMOSIS.

(See page 589.)

DR. JOHN ASHHURST, JR., considered this plan of lateral anastomosis to be one of the greatest improvements made in this department of surgery. He had not had the opportunity of using either the bone plates of Prof. Senn or the catgut rings of Dr. Abbe, but was disposed to think that the rings are better than the plates. Besides giving a larger opening, they would seem to be more easy of adjustment, more likely to adapt themselves to the shape of the parts, and more apt to effect accurate apposition. The suggestion of Dr. Abbe that the two portions of gut should be so placed that the peristaltic wave may be continuous, seemed to be also of much value. One would certainly suppose that this would render the restoration of natural function easier than for the intestinal contents to be made to turn a sharp corner, as it were, in passing from one portion of the bowel to the other.

DR. C. B. PENROSE said that his experience with this operation of intestinal anastomosis was limited entirely to experiments on the dog. Instead of using the bone plate of Senn or the catgut ring referred to by Dr. Abbe, he used a rubber ring sewed together with catgut; instead of using silk sutures he employed catgut. In five or six days the catgut would be absorbed, and the rubber would adapt itself to any shape for passage through the intestinal tract. In all cases the rings passed within ten days after the operation. There is no advantage in this method over those mentioned, except that the material employed may be obtained when bone or catgut is not available. The rubber disks can be cut of the necessary size and shape from ordinary sheet rubber. In most of his experiments, instead of using reinforcing Lembert sutures, he placed a circular omental graft around the line of union.

DR. ASHHURST did not understand Dr. Abbe to recommend that intestinal anastomosis should be adopted in the treatment of intestinal obstruction, but in cases of fistula which may result from obstruction or other causes. He thought it a well-established fact in surgery that the line of safety in intestinal obstruction in which it is necessary to remove a portion of the bowel, is to estab-

lish a temporary false anus, and to postpone to a subsequent occasion the attempt to restore the continuity of the bowel by this or some other method. The only exception recognized is where the portion of the bowel removed is so high up or where it is so large that a great portion of the intestine would be thrown out of use. For instance, if it were necessary to remove a portion of the jejunum high up, the establishment of an artificial anus would leave so small a portion of the bowel for digestion, that the patient would starve to death, and in such a case it would be proper to endeavor to restore the continuity of the gut at once, although the immediate danger of the operation would be thereby increased. Where, however, the portion removed was lower down in the small intestine, or in the large intestine, the proper course would be to make a temporary artificial anus, let the patient get over the effects of the obstruction, and at a future time endeavor to restore the continuity of the bowel by whatever method might seem proper.

DR. JOHN B. ROBERTS vividly recalled a case that he lost because he was not sufficiently familiar with these operations to shoulder the responsibility of making an artificial anus. This case was seen shortly after Senn's method had been described. He was called to operate on a strangulated hernia in the country where the patient could not receive much subsequent surgical attention. He found the bowel pretty blue. He debated some time whether it would be better to make an artificial anus or return the bowel. He thought that he had seen the circulation return in bowels as blue as this one, and taking all the circumstances of the case into consideration, decided to return the bowel. The external wound healed rapidly and well, and everything appeared to be right, when suddenly on the fifth or sixth day, in the absence of the attending physician, the patient was seized with intense abdominal pain and expired in a few hours from what undoubtedly was a perforation made by a slough of the intestinal wall. If he had been present, he would have done an immediate laparotomy. He thought that if he had such a case, after hearing this paper, that he should be much more likely to make an artificial anus, and run the risk of curing it subsequently by intestinal anastomosis.

Another indirect result of this method of operating will be that we shall deal with malignant disease more satisfactorily than has been the case heretofore. After making this artificial anastomosis in a case of malignant disease of the intestine, it becomes a proper question whether at a subsequent time the abdomen should not be opened and the cancerous mass be excised with the hope of a radical cure. He believed that in many cases of malignant disease, early, radical, and repeated removal may finally effect a cure. He did not see why with this method we cannot attack malignant disease of the intestine at a much earlier period. He had never been inclined to adopt the excisions done at Vienna and other places for intestinal and pyloric malignant growths, but with lateral anastomosis there is possibly a chance for a safe or even a radical cure by operation.

DR. M. PRICE said that this paper three months ago would have been of vast service to him. "He had a case of strangulation the result of epithelioma involving four inches of the bowel, the obstruction being almost complete. The obstruction had continued eleven days, but the patient was in moderately good condition. With

the method which had been described it would have been easy to unite the two portions of bowel, and this would have saved an immense amount of trouble and annoyance. The patient is of a nervous, irritable temperament, and the application of Dupuytren's instrument causes great annoyance. The subsequent management of the case will probably be difficult, unless this method be adopted. The belly is large and flabby, and the closure of the external wound will probably be a matter of difficulty.

In pelvic work it is impossible in some cases to avoid tearing the bowel; having such an easy method of closure he should not fear the result. He should have no hesitation in cutting out a portion of the bowel diseased and thickened, which offers very little chance of good recovery, and bring the portions of the bowel together by the method suggested by Dr. Abbe.

DR. J. M. BALDY spoke of the comparative value of the three materials which have been mentioned. One great objection to the bone plate of Senn is the small calibre of the opening which results. Again, the material must pass by the bowel, and in doing so the piece of bone may possibly cause damage. To a great extent these objections are obviated by the rings of catgut. If these rings are examined closely, it will be seen that they are very hard, large, and thick, and that it would be improbable that they should be absorbed in the length of time it would take for them to become loose. In ten days the rings used by Dr. Penrose had passed. We should not expect this ring of catgut to be absorbed in that time. If it should not be absorbed, it would not pass as readily as the rubber ring. The latter would cause no more trouble than so much tripe. The rubber rings could be readily kept for any length of time. The catgut rings, as Dr. Abbe explained, must be kept under compression in some solution, and must be carefully prepared by a comparatively tedious process. This is all obviated in the rubber ring. The approximation by rubber seems to have some advantage over catgut, and the catgut is a most decided advance on the bone plates.

THE PRESIDENT, DR. W. W. KEEN, desired to say a word in regard to one of the cases narrated by Dr. Abbe. He was present at the operation, and certainly a more unfavorable case could not be imagined. The woman appeared upon the verge of the grave, and he expected to hear of her death in the course of a week, if not even earlier. It seemed impossible that she should recover, not only from the great emaciation, but also from the operation, which was necessarily very prolonged and very difficult, in consequence of the matting together of the intestines and surrounding parts. He certainly thought that we are to be congratulated upon having such a valuable paper upon such an important topic, and that Dr. Abbe is to be congratulated upon such favorable results in such an unfavorable case.

He could hardly agree with the last remarks of Dr. Ashhurst, in reference to making an artificial anus rather than performing immediate lateral anastomosis of the bowel. This seemed to expose the patient to a greater risk, as it involves the performance of two operations instead of one; one an operation of necessity when the artificial anus would be made, and second a laparotomy when the lateral anastomosis would be made, which always involves some risks. He could see no valid reason why a patient requiring the formation of an arti-

ficial anus, in many if not in most cases, might not have the advantage of immediate lateral anastomosis, and thus avoid two operations, as the lateral anastomosis operation would be hardly more prolonged and involve no greater risk than the formation of an artificial anus, if, indeed, it is attended with as much risk. If he correctly understood the paper, this method was proposed not only for the relief of existing fecal fistulæ, but also for other conditions, such as shot-wounds, excision of the bowel, etc., which would require the formation of an artificial anus.

DR. ROBERT ABBE said that he spoke of the use of this method in the immediate apposition of the intestine in dangerous cases, but he did not intend to emphasize this point. He was rather inclined to agree with Dr. Ashhurst in thinking that an artificial anus should be established. The discretion of a surgeon of considerable experience will, however, allow him to make immediate apposition in certain cases, but, for universal recommendation he thought that often it would be attended with additional risk. If the patient may be hastened over the shock and an artificial anus established in a few moments, the second operation for anastomosis under favorable circumstances is attended practically with little risk. In cases of serious obstruction, lasting for three or four days with shock and intestines over-distended, he thought an artificial anus should be established.

With regard to the suggestion of Dr. Penrose, he thought that some such device as he suggests may succeed everything that has yet been thought of. He did not vaunt the use of catgut rings as having any supremacy. Senn's plates have advantages; in gastro-enterostomy they would be less easily digested than the catgut, but these simple rings have two or three undoubted advantages. With regard to the absorption of catgut, it occurs in less than ten days. In both of his earlier specimens the catgut is gone, and in these the intestine was removed at the end of nine days. It will probably be absorbed in four or five days.

The catgut rings when taken out of the alcohol and put in the intestine swell a little, giving additional firmness and very tight apposition. Senn, in his experiments, oftentimes found the plates plugged by hair, straw, etc., which the dog had swallowed. This built up an obstruction at the operated part which produced serious trouble. These rings, on the contrary, have a very large aperture from the first—as large as two inches. In this narrowed form it slips readily into the incision in the bowel which closes over it, while the diamond-shaped plates of Senn cause a curling over of the edge of the stretched small intestine. When the outside sutures are applied with catgut rings there is from one-fourth to one-half an inch of the two serous coats in contact. If we have more than that, as we do with bone plates, we take something from the lumen of the bowel which would be better left.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, April 11, 1889.

J. LEWIS SMITH, M.D., CHAIRMAN.

DR. T. H. HOLGATE read a paper on

THE TREATMENT OF NÆVUS

and reported some good results from injections of alcohol

into vascular tumors. After giving a detailed account of all the methods of treating nævus, such as injections of many different substances, external applications of astringents, caustics, the actual cautery, electrolysis, vaccination upon vascular excrescences, ligature beneath pins, double ligature, setons, etc., he presented a boy four years of age, whose vascular tumor, as large as a filbert, and located on the right ala nasi, had almost completely disappeared after injecting, by means of a Pravaz syringe, a few drops of ninety-five per cent. alcohol. These injections were repeated several times, whereupon the tumor hardened and the skin became pale.

His second case was a child two months old, with a vascular tumor upon the chest. One injection of alcohol was made and the injected fluid confined *in loca* by means of a ring pressed down upon the parts. The tissues whitened in a short time, leaving no scar and but a small portion of the original nævus. In conclusion, Dr. Holgate said that he had no knowledge of alcohol having been used for the purpose by any one else, and he believed that this method, if properly carried out, would constitute a satisfactory treatment for nævus.

DR. HEITZMAN took exception to the term nævus (birth-mark); he would prefer the more scientific name angioma. The treatment of angiomata would depend upon their either being flat, lobular, or cavernous. He had seen no good results from sodium ethylate or electrolysis. He removes small angiomata by means of curved scissors, large and superficial ones with nitric acid. In the cavernous variety he employs nitric acid on a pointed hickory stick which is pushed deep into the tumor. He would give alcohol a trial.

DR. FOX remarked that the cavernous variety will probably not be cured by alcohol. He found electrolysis efficacious and manageable in wine marks, giving fair results. A cambric needle connected with the negative pole of the battery will transform dark into light spots. He had tried linear scarifications with poor success, and referred to Mr. Churchill's work on *Foot and Face Deformities*, in which a red-hot needle is highly recommended.

DR. GERSTER remarked that the location and form of the new growth determine the treatment. Injections of alcohol into goitre had been practised in Vienna. One fatal case had occurred in Billroth's clinic after injecting one-half ounce of alcohol, acetic acid fermentation and sepsis taking place. The fatal result was evidently due to septic material introduced at the time of injecting and not to the alcohol. Hollow needles must be absolutely aseptic.

Alcohol injections may be good in nævus of limited extent. Personally, he employs the knife and actual cautery. When the pointed cautery is used it must be rotated in and about the vascular tumor from one single or central puncture. An angioma in the lips or cheeks may occasionally be approached from the side of the mucous membrane, thus avoiding an external scar.

DR. CAILLÉ had treated a number of vascular tumors successfully with the actual cautery. Alcohol injections might be useful and should be tried, the more so as there are a number of cases on record in which alcohol injections into the tissues had been successfully employed to set up inflammatory adhesions and radically cure hernia in children.

EIGHTH GERMAN CONGRESS OF INTERNAL MEDICINE.

Held at Wiesbaden April 15th to 18th, 1889.

(Specially reported for THE MEDICAL NEWS.)

(Concluded from page 559)

DR. KRAUSE, of Berlin, read a paper

ON THE TREATMENT OF LARYNGEAL TUBERCULOSIS.

In cases of laryngeal tuberculosis he has often used surgical treatment, and has found that tracheotomy, which had been recommended by Schmidt in 1880, has rendered excellent service to the organ, giving it absolute rest, which favors the curative processes. But the preëxistence of pulmonary tuberculosis and its rapid development may be a contraindication to this operation; on the other hand, we must not forget that the removal of the canula is far from being devoid of danger. He then communicated the results which he had obtained by means of curetting.

The local treatment by lactic acid, after four years' experience, has left a good impression on him, and he thinks it useful especially against the symptom pain.

The cases of laryngeal tuberculosis which he has treated at the Berlin Polyclinic during these past four years, he has divided into two classes: 1st, Mild cases, amongst which he has classified paresis or laryngeal catarrh accompanied by tuberculous pulmonary lesions. 2d, Severe cases, which include tuberculous ulcerations, infiltrations, and erosions.

In 1885, 607 persons were treated at the clinic—out of which 67 suffered from laryngeal tuberculosis, 42 were mild cases and 25 severe cases.

In 1886, 986 persons presented—of which 113 were cases of laryngeal tuberculosis, 46 mild cases and 67 severe ones.

In 1887, 1363 persons—149 tuberculosis of larynx, 65 mild and 84 severe cases.

In 1888, 2285 persons—240 laryngeal tuberculosis, 127 mild and 113 severe cases.

Out of the 289 severe cases, 58 underwent the curette treatment, plus 13 cases in his private practice, which give him a total of 71 cases, out of which 41 were completely cured—or at least there was a remarkable amelioration with disappearance of the painful phenomenon, for where non-cicatized ulcerations persist one cannot admit a cure from an anatomical point of view.

Out of those patients which are recorded in his statistics, 16 are cured up to the present and the disease has shown no signs of return, 12 are still undergoing treatment, and 7 died, but not as a result of their laryngeal tuberculosis. Several patients have been lost sight of; in 15 he observed a recurrence of the disease.

In unfavorable cases, he has had to deal with a very generally developed cachexia with advanced pulmonary and laryngeal lesions, or again with lesions showing a great tendency to recur. In such cases, however, we must not give up all local therapeutical means, and if this last procedure is not successful, we must use the intervention of a general treatment. Under such circumstances, the establishment of hospital sanitariums would be very useful to the working classes. As to the wealthy patients, he did not think that they ought to be sent indiscriminately to winter resorts, on account of the

bad hygienic conditions in which they place themselves during their travel or stay in such places, when their lesions have just begun, allow them to lead a life detrimental to their final cure.

M. SCHEINMANN, of Berlin, from observations made at the Berliner Polyclinic, in cases of phthisis, stated that therapeutical success seems to depend more on the earliness of the diagnosis on the one hand and to local treatment on the other. Amongst the methods employed at the Berlin Polyclinic, incisions, curetting, scarifications, cauterizations by means of lactic acid, have all given favorable results, provided the correct method has been applied in each case; often, also, surgical means have been used in conjunction with medical applications. Surgical intervention, however, must be resorted to only in cases in which the local lesions and general state of the patient allow it; when contra-indications to surgical means appear to exist or when a more simple treatment from a technical point of view is sufficient, the use of menthol is one of the local medications most to be recommended.

DR. STORCK, of Copenhagen, then described a

SIMPLE PROCESS FOR ASPIRATING LIQUIDS FROM SEROUS CAVITIES.

In cases of empyema and ascites, he replaces the apparatus of Dieulafoy, Unverricht, Quincke or Fürbringer, which get easily out of order, by Bunsen's aspirator, such as is used in chemical laboratories to hasten filtration of liquid. The trocar or drainage tube is put in direct communication by means of a soft tube (in the course of which we may place a recipient, which will enable us to recognize the pathological fluid) with a bottle having two openings, and previously filled with water, and in which the flowing out of the liquid, which falls into a vase placed beneath it, brings about an aspiration analogous to that of an air-pump. He has taken out by means of this apparatus, more than twelve quarts of ascitic liquid, also pus in empyema, with most satisfactory results.

PROF. LEYDEN, of Berlin, said that we cannot speak definitely of the value of the operation in empyema; many patients can hardly resist the operation, and in young children it is difficult to obtain the necessary immobility; in each case we must not overlook the general state of the patient.

The Congress then adjourned to meet again at Wiesbaden in April, 1890.

CONGRESS OF THE GERMAN SOCIETY OF SURGERY.

Eighteenth Annual Session.

Held at Berlin April 24th to 27th, 1889.

(Specially reported for THE MEDICAL NEWS.)

The eighteenth German Congress held its first meeting on April 24th, under the presidency of PROF. VON BERGMANN.

PROF. VON ESMARCH, of Kiel, read the first paper, which was on the

ETIOLOGY AND DIAGNOSIS OF CANCER OF THE LIPS AND TONGUE.

We meet with ulcerating tumors analogous to cancer throughout the whole organism, but they are more often

met with on the lips or tongue (syphilitic or tuberculous tumors, or, again, affections of microbial origin). The appearance and the mode of development of these tumors do not allow us to differentiate them easily from carcinoma, and they require a different treatment from cancer, which demands radical extirpation, while other tumors permit of internal treatment and are curable by a less radical surgical interference. In all cases, however, in which a large operation is to be performed, a microscopical diagnosis ought to be made. This histological examination ought even to be several times repeated and tissues at different depths taken.

When the tumors are easily reached a special trocar is used, which allows, at the same time that the puncture is made, the withdrawal of a small piece for microscopical examination. Syphilitic tumors are those which are most liable to occasion faulty diagnosis. Sarcomas of muscular tissues are mostly nothing but syphilomas, which is the reason why we most frequently find that syphilomas of the tongue and lips are, for the most part, constituted by muscular tissue. Syphilomas can manifest themselves many years after infection.

When in microscopical examination the fragment of the tumor does not show any alveolar structure, epithelial agglomerations, cancrinoid pearls, tubercular bacilli, stellated rays as in actinomycosis, but, on the contrary, a tissue of granulation, of recently formed connective tissue, of fusiform cells, one can then make, by exclusion, the diagnosis of syphiloma, even if no traces of hereditary or acquired syphilis should exist; the anti-syphilitic treatment must then be resorted to immediately. Iodide of potassium is the preparation he first gives, then the mercurial or arsenical preparations; this anti-syphilitic treatment must be kept up for a long time—months may be necessary before any action can be found. Great care must be used with benign syphilitic tumors, they must not be taken away with the knife, for it may bring on a rapid recurrence and give a malignant tendency to the affection.

Returning to the etiology of cancer, many possible causes have been given: wounds, penetration of a foreign body into the parts, such as tobacco, cicatrices after burns and operations. In addition, benign tumors can be transformed with time into a malignant type, such as verrucosa, naevus, papilloma, condyloma, atheroma, syphiloma. Chronic irritation of the skin or mucous membrane can also give rise to malignant tumors. Another cause of cancer, according to Virchow, is the feeble resisting power of certain tissues by predisposition.

It probably is the diminution in the resistance of the inflamed tissues which helps or allows the penetration of the connective tissue by epithelial cells; this would be the way of explaining the chronic irritation which seems to play such a prominent part in the etiology of the cancers of smokers. As to the heredity of malignant tumors, it is more an hereditary tendency to connective tissue proliferations, and he thought that hereditary syphilis, and especially the one that has passed through numerous generations—ancestral syphilis, plays an important pathogenic rôle in the production of connective-tissue tumors. Now, is the origin of epitheliomas an analogous one? He thought it was, and that ancestral syphilis still exerts its influence in such cases, for cases in which there exists an epithelial proliferation, such as xeroderma, eczema, psoriasis, are transmissible by heredity. As an example,

he presented a drawing of three patients suffering from xeroderma; two brothers and a sister, whom he had often seen at his clinic; their lips were completely covered with pigmented vegetations. In such cases he thinks it necessary to interfere very promptly to prevent a subsequent transformation of the disease into a malignant tumor.

DR. HEIDENHAIN, of Berlin, then read a paper

ON THE CAUSES OF THE LOCAL RECURRENCE OF CANCER AFTER EXTIRPATION OF THE MAMMARY GLAND.

He had made an histological examination of eighteen cases of cancer of the mammary gland for primary cancer. In all cases in which there had been a recurrence he was able to make out by microscopical examination that fragments of cancer had remained in the wound after the operation. If it is easy to see infiltrated lymphatic glands, it is not easy to see by the naked eye if the tumor has been completely removed. In the eighteen cases which he had examined, he had tried to ascertain whether in the section of the tumor which was in contact with the healthy tissues, he would find healthy or diseased tissue; on the presence of healthy or diseased tissue would depend the recurrence of the disease. He examined in this manner several fragments of each tumor; in twelve cases he had found the tissues infiltrated with epithelial rays, and out of these twelve cases there had been eight recurrences, one death as a result of the progress of the cancer in the other non-operated mammary gland, another patient had disappeared, and the two others remain well. In six cases he had found only healthy tissues, and in those six cases the carcinoma has not reappeared up to date.

In cancer of the breast, the epithelial extensions follow the lymphatic vessels and extend often to the pectoral aponeurosis; it is, therefore, very important to take away the aponeurotic covering of the pectoral muscles, and even to cut into the muscle so as to be sure that the lymphatic vessels, which cross the aponeurosis perpendicularly, are not infected. For a long time Dr. Küster has been in the habit of taking away this aponeurosis, because of the bad prognosis presented by cancerous tumors which are adherent to the pectoral aponeurosis.

Out of sixty-five cases in the practice of von Volkmann in which the tumor was adherent to the pectoral aponeurosis two were cured, and in all the others the disease has returned. Out of twenty-one cases of the same kind operated on by Küster, but a single one is still alive, and she has a return of her trouble; hence, when the tumor is adherent, it is well to take away a good part of the muscle and to clean it thoroughly, so as to be sure that the whole growth has been removed.

MR. VICTOR HORSLEY, of London, then read a paper on

THE METHODS OF DIAGNOSIS OF LESIONS OF THE MOTOR ZONE OF THE CEREBRAL CORTEX.

He desired to expose the principles according to which one can establish with certainty the diagnosis of the seat and the nature of the lesions in partial epilepsy of the motor zone of the cerebral cortex. The function of the motor zone is a triple one: 1. Tactile sensation; 2. Muscular sensation, locomotion, and movement; 3. Co-ordinate motor force. This motor zone can be involved by a lesion which is either exciting or depressing. An

excitation shows itself ordinarily : 1. By a sensitive aura, which consists in a sensation of itching; 2. By tonic and clonic movements; the clonic movements are met with in tumors of the cortex, while the tonic movements are more a lesion of continuity.

Beever and himself have made experiments on the monkey, and have succeeded in analyzing in a more precise form the motor function. As a result of their experiments, confirmed by clinical observations, there is found in the motor zone of the cerebral cortex centres for the localization of movement of each segment of an extremity; for example, for the index, the thumb, the fingers, the wrist-joint, the elbow, the shoulder, etc. At the first excitation there can be produced a movement of one or two segments of this extremity—for example, the flexion of the thumb; at the second and third excitation one can obtain a typical case of Jacksonian epilepsy. If one destroys one of those motor centres, a paralysis with a loss of sensibility and movement is produced. If, however, the destruction of the centre is not complete, even if movements are still present, there is a loss of the topical localization; the animal still feels, but cannot exactly determine the seat of the tactile or painful sensation. Charcot has for a long time made these same experiments on the localization of movements in hysteria. The temperature on the paralyzed side and on the healthy side presents the same variations as in recent hemiplegias as to the secretions of the glands of the skin; injections of pilocarpine by Strauss have shown a diminution in the secretion on the paralyzed side.

DR. K. SCHUCHARDT, of Halle, then read a paper on

THE NATURE OF OZÆNA.

The different theories which have been formed to explain the fetidity of ozæna are very unsatisfactory. This odor has been attributed to the neighboring cavity of the nasal fossa; but this explanation is not sufficient, for the nasal mucous membrane is itself deeply involved. Others have hunted after a specific microorganism without any satisfactory results. Dilatation of the nasal fossæ occurring as a result of atrophy of the turbinated bones does not suppress the ozæna. Still Zuckerkandl has found no case of ozæna in congenital atrophy, and for a number of years von Volkmann has obtained in recent cases of ozæna a great amelioration of the disease by means of dilatation of the nasal fossæ. This enlargement is obtained by excising a large part of the turbinated bones. In fragments obtained from such resections the author has found that the cylindrical epithelium of the nasal mucous membrane was transformed into pavement epithelium. In a great many cases he has examined the secretions from ozæna, and has found a great many microorganisms in pavement epithelial cells, and sometimes cells of the buccal cavity. He has, moreover, found pavement epithelial cells half the size of the normal ones, and which he considers as an epithelium of transition between cylindrical and pavement epithelium. A study of the fragments obtained by excision has shown a mucous membrane devoid of glands and transformed either into a tissue of granulation or into cicatricial tissue, and constituted by ten or twelve layers of pavement epithelium. The cells of the upper layer were quite analogous to those of the epidermis. This epidermoidal tissue increases more and more, a mass of dead epithelial cells is formed which putrefies, and the accumulation of which

becomes dangerous. He thought it important to draw attention to the fact that in mucous membranes where the cylindrical epithelium is transformed into the pavement variety, it is not a rare fact to see a cancrroid appear in the future.

DR. PETERSEN, of Kiel, then read a paper on

A NEURALGIC AFFECTION OF THE KNEE.

He had treated a patient presenting all the symptoms of an articular affection of the knee with intense neuralgic pains accompanied by fever. Massage had been employed with negative results. He placed a plaster bandage, which he allowed to remain in position for ten months and a half, after which time he took away the bandage and allowed the patient to walk about; pain soon returned, accompanied by swelling and fever. He then decided to have recourse to an operation, but found nothing abnormal in the peri-articular tissue nor in the synovial membrane. The patient was cured without any rise of temperature, and presented after the operation symptoms of hyperæsthesia, which she had never felt before, besides other hysterical phenomena, but the articular pain had disappeared.

PROF. VON ESMARCH had observed a case of neuropathic coxalgia in an hysterical woman, who presented all the symptoms of hereditary tuberculosis, and even had tubercular glands, with fever in the evening. He tried five times to immobilize the parts with a plaster apparatus, and five times the pains and fever disappeared, but the affection would return as soon as the apparatus was removed. He then decided to open the articulation, but found no traces of inflammation, all the articular tissues being healthy. Cure was rapid; fever disappeared, and to-day the patient walks perfectly well, without any pain.

(To be continued.)

NEWS ITEMS.

The Staff of the Johns Hopkins Hospital.—The Trustees of the Johns Hopkins Hospital have accepted and approved the following appointments:

Hospital Staff.—Physician-in-chief, Dr. William Osler; Pathologist, Dr. W. H. Welch; Chief of Dispensary, Dr. W. S. Halsted; Resident House Physician, Dr. H. A. LaFleur; Resident House Surgeon, Dr. F. J. Brockway; Assistant House Physician, Dr. Harry Taulmin; Assistant House Surgeon, Dr. G. E. Clarke. Consulting Physicians and Surgeons—Dr. Alan P. Smith, on the part of the Hospital Trustees, and Dr. James Carey Thomas, on the part of the University Trustees, and Dr. I. E. Atkinson, Dr. S. C. Chew, Dr. Frank Donaldson, Dr. W. T. Howard, Dr. Chris. Johnson, Dr. T. S. Lattimer, Dr. F. T. Miles, Dr. G. W. Miltenberger, Dr. L. McLane Tiffany, and Dr. H. P. C. Wilson.

Dispensary Staff.—Chief of surgeons, Dr. W. S. Halstead, with the assistance in general surgery of Dr. James Brown and Dr. J. M. T. Finney, and the resident house surgeon, with Dr. S. Theobald in charge of the Diseases of the Eye and Ear, and Dr. R. B. Morrison in charge of the department of Diseases of the Skin.

Chief Physician, Dr. W. Osler, with the assistance of Dr. William D. Booker, in the treatment of Diseases of Children, and Dr. H. M. Thomas in the treatment of Nervous Diseases, and the resident house physicians,

with Dr. J. N. Mackenzie of the department of the Diseases of the Throat.

Clairvoyance and Malpractice.—The Supreme Court of Wisconsin has rendered a very important decision, says the *New Haven News*, that a clairvoyant physician is liable for failure to exercise the ordinary skill and knowledge of a physician in good standing, practising in the vicinity, and not merely to the ordinary skill and knowledge of clairvoyants. It is held by the Court that if any one holds himself out as a medical expert and accepts employment as a healer of diseases, but relies for diagnosis and remedies upon some occult influence exerted upon him, or some mental intuition received by him when in an abnormal condition, he takes the risk of the quality of accuracy of such influence or intuition.—*Boston Med. and Surg. Journal*, May 16, 1889.

Narrow Chests and Tuberculosis.—The Prussian army surgeons have been ordered to measure the chests of recruits, especially of narrow-chested ones, every four weeks. All are to be regarded as narrow-chested, the circumference of whose chest is less than half the length of their bodies. Narrow-chested men whose chests are not widened by drill, are to be regarded as predisposed to tuberculosis, and to be discharged as soon as possible, that they may not infect healthy soldiers.—*Lancet*, May 11, 1889.

Legislation for the Prevention of Milk Infection.—The proposal which Mr. Shirley Murphy made at the Hastings Congress, that local sanitary authorities should be empowered to make regulations for the prevention of milk contamination due to eruptive diseases of the cow, will commend itself to those who only regard these affections as polluting the milk with pus and other morbid products, as well as to those who consider that they possess still larger powers of inflicting injury on the health of milk-drinkers. We have no hesitation in saying that milk thus contaminated ought not to be sold as food for man, and local authorities might well be empowered to take steps to prevent the occurrence or extension of diseases of this nature. The enforcement of regulations for securing the quarantine of cows newly arrived on a farm, the isolation of any cow thus affected, and the washing of the milker's hands between the milking of successive cows, have already been proved in different parts of the country to afford a material security against the occurrence of these maladies, and might with advantage be generally adopted. The fact that many cowkeepers enforce them in their own interest is a sufficient answer to the objection that they would interfere with business arrangements. So, again, the public have a right to be protected against possible injury through the sale of any cow suffering from eruptive disease, and especially if this animal be one of a herd whose milk is under suspicion of having caused infectious disease among its drinkers. At the present time there is no control exercised over these infectious maladies except that which is dictated by the experience of careful and conscientious cowkeepers. To demand that all should take the precautions recognized to be necessary by the few would inflict no hardship, but would even promote the cowkeepers' interests; for the loss of milk which occurs owing to the reduction in the quantity of milk supply when a cow suffers from

eruptive disease is itself sufficiently important to make it desirable that every care should be taken to maintain the stock in good health.—*Lancet*, May 4, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 21 TO MAY 27, 1889.

By direction of the Acting Secretary of War, the leave of absence, on surgeon's certificate of disability, granted WILLIAM H. FORWOOD, *Major and Surgeon*, in S. O. No. 35, April 8, 1889, Department of Dakota, is extended one month on surgeon's certificate of disability.—Par. 13, S. O. 118, A. G. O., Washington, May 22, 1889.

MIDDLETON, PASSMORE, *Major and Surgeon*.—Will, as soon as practicable after his arrival at Fort Trumbull, Connecticut, proceed to Fort Warren, Massachusetts, and report for temporary duty until the return of the post surgeon from detached service with batteries of the Fourth Artillery ordered to Atlanta, Georgia. He will then return to his proper station (St. Francis Barracks, Florida).—Par. 2, S. O. 113, Headquarters Division of the Atlantic, Governor's Island, New York City, May 18, 1889.

MCELDERRY, HENRY, *Major and Surgeon*.—Is granted leave of absence for one month, to take effect upon completion of his duties as a member of the Army Medical Examining Board in New York City.—Par. 4, S. O. 44, Headquarters Division of the Atlantic, Governor's Island, New York City, May 23, 1889.

PALZKI, J. H., *Major and Surgeon*.—Is granted leave of absence for twenty one days.—Par. 1, S. O. 44, Headquarters Department of Arizona, Los Angeles, California, May 18, 1889.

RAFFERTY, OGDEN, *First Lieutenant and Assistant Surgeon*.—Ordered with troops for field practice to Galveston, Texas, where troops will camp for such time as may be hereafter directed.—Par. 1, S. O. 29, Headquarters Department of Texas, San Antonio, Texas, May 13, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING MAY 25, 1889.

WHITING, ROBERT, *Passed Assistant Surgeon*.—Ordered to the Receiving-ship "Minnesota."

HARMON, G. E. H., *Surgeon*.—Detached from the Naval Academy, and ordered to the "Constellation."

LOWNDES, C. W. F., *Assistant Surgeon*.—Detached from the Naval Academy, and ordered to the "Constellation."

ARNOLD, W. F., *Assistant Surgeon*.—Detached from the "New Hampshire," and ordered to the "Pinta."

RUSH, C. W., *Passed Assistant Surgeon*.—Detached from the "Pinta," proceed home, and wait orders.

MCCLURG, W. A., *Surgeon*.—Ordered to the Bureau of Medicine and Surgery.

STITT, E. R., *Assistant Surgeon*.—Detached from the Bureau of Medicine and Surgery, and ordered to the "New Hampshire."

ECKSTEIN, H. C., *Surgeon*.—Ordered to the Marine Rendezvous, Philadelphia, Pa.

BRADLEY, M., *Medical Director*.—Detached from the Marine Rendezvous, Philadelphia, Pa., and continue on special duty at Philadelphia.

HENEBERGER, L. G., *Passed Assistant Surgeon*.—Detached RUTH, M. L., *Surgeon*.—Granted another year's leave.

from the "Thetis," and ordered to the "Iroquois."

HESLER, F. A., *Assistant Surgeon*.—Promoted to be Passed Assistant Surgeon in the U. S. Navy.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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